



**SKRIPSI**

**THE EFFECT OF MULTIPLE INTELLIGENCES STATION TO  
IMPROVE STUDENTS' ABILITY IN WRITING NARRATIVE TEXT  
AT SECOND GRADE STUDENTS OF MAN 1 BINJAI 2016/2017**

*Submitted as Partial Fulfillments of the Requirements for the Degree of Sarjana  
Pendidikan (S.Pd) in English Education Study Program.*

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**MEDAN**

**2017**

## ACKNOWLEDGMENT

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the name of Allah SWT, the beneficent and merciful. Praise be to Allah, the lord of the universe. By the whole modest heart, the writer would like to express thankfulness to Allah SWT that has given the writer health and blessings, therefore, the thesis entitled: **“The Effect of Multiple Intelligences Station to Improve Students’ Ability in Writing Narrative Text at Second Grade Students of MAN 1 BINJAI 2016/2017”** has been done. Peace and blessing be upon to the prophet Muhammad SAW, his families, his relatives and all his devotees.

The thesis was written as a partial to fulfillment of the requirement for S-1 program at State Islamic University of North Sumatera (UIN-SU) Medan.

In completing this, the writer had encountered some difficulties, especially in collecting and analyzing data and the writer also realized that without much help from numerous people, this thesis would have not much help completed as it was. Concerning with this completion of this thesis, the writer would like to express thanks to the following people:

1. I would like to thanks to my beloved parents, my father Alm. Suwardi and my mother Sri Wardani. Thank you very much for all loves, times, support, du’a, advice and everything you have given to me. All of your

pray that has lead me to this top. Thank you will never enough to express everything. Thank you so much mom and I miss you Dadd.

2. Dr. Amiruddin Siahaan, M.Pd as the Dean of Faculty of Tarbiyah and Teachers Training State Islamic University of North Sumatera.
3. Drs. Amiruddin, MS, M.A., M.B.A., Ph.D. and Maslathif Dwi Purnomo, M.Hum as my advisors who have guided and given advices for me and also some suggestion in complementation this thesis.
4. Mariaty Salmiah, M.Hum as my academic advisor who has guided and helped me to solve my problems since I studied in UIN-SU Medan.
5. I would like to express my biggest thanks to all the lecturers who has inspired me, Mam Ayu Indari, Mam Nazla Farhani, Mam Rahma Fitriani, Mam Farida Repelitawati Kembaren, Mam Heni, Sir Akmal, Sir Maslatif, Sensei Yusuf. Thank you for being my inspiration.
6. I also would like to express my biggest thanks to all of my teachers at SD MUHAMMADIYAH 02 BINJAI, SMP NEGERI 3 BINJAI, SMA NEGERI 6 BINJAI. Thank you for the patience and the preaching that you have given to me so that I could pursue my dream until the university.
7. The Principal of MAN 1 BINJAI and all its staff who has allowed me to do the research.
8. All of my students in XI-MIA 1 and XI-MIA 4, thank you for all your participation and your enthusiasms. You were really helpful.
9. My beloved brother Aji Dewantoro and my beloved sister Anggun Tri Dewani who always support me and be the best accompaniment at home to do everything.

10. For my very bestfriends, my girl squad, Shinta Syintia, Yulia Anggraini, Siti Zubaydah Sipahutar, Liza Sakbani. You are the best friend ever. Thank you for being the beautiful part of my life. I love you to the square of infinity.
11. For someone out there who inspires me to love myself, believe within my capability. Thank you for encouraging me and be my writing's partner for a truly memorable one month, #Suryamersudi. May we always keep the SILATturahim.
12. For my very special brothers, Kim Namjoon, Kim Seokjin, Min Yoongi, Jeong Hoseok, Park Jimin, Jeon Jongkook and my future Kim Taehyung.
13. For all of my awesome and beloved friends, Siti Aisyah Sahira, Zikri Nova Sausanti, Wilda Novri Anisah, Aulia Rizky Ramadhani, Zul'Aini Izar, Syafitri Amelga. Maulidil Khairi, Fadli, Ihsan A.Ridho, Fahmi A. Batubara, Ikhwan Fauzi for being the most famous the boyband in the class and all of my beloved friends in PBI-4 that I cannot mention one by one, thank you for the joy, for all laughs, for love and also for your helping. Irreplaceable.
14. For all of my KKN friends of Pekan Kuala, thank you for being such a happy family and thank you for all the love, care and attention you have given to me. Loveable and unforgettable.
15. For all my families in Kelas Dewantara, Inspirator Indonesia, KBBI, Gerakan Sumut Mengajar, thank you for the best inspiring moment. Keep inspiring.

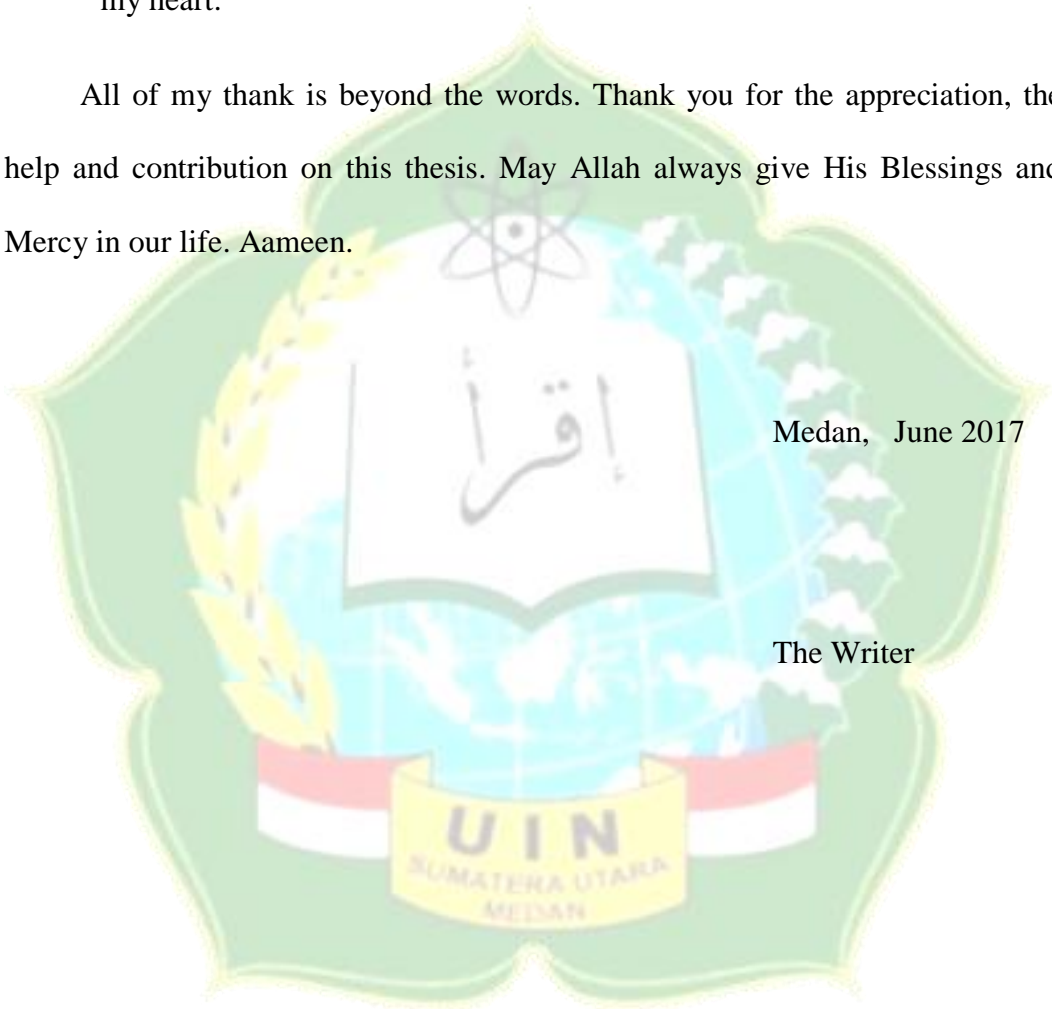
16. All of my friends at SD Muhammadiyah 02, SMP Negeri 3 Binjai (VII-5, VIII-1, IX-3) and SMA Negeri 6 (X-6, XI-IPA 1, XII-IPA 1), thank you for being my friends until now.

17. For all the people that has supported me to do everything, I really thank you. Uri comeonim, abeonim, thank you for completing the emptiness in my heart.

All of my thank is beyond the words. Thank you for the appreciation, the help and contribution on this thesis. May Allah always give His Blessings and Mercy in our life. Aameen.

Medan, June 2017

The Writer





## ABSTARCT

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 To Improve Students' Ability In Writing Narrative Text At  
 Second Grade Students Of Man 1 Binjai 2016/2017

Skripsi, Medan: Department of English Education, Faculty of Tarbiyah Science and Teachers Training, State Islamic University of North Sumatera, Medan 2017.

**Keywords:** *Multiple Intelligences, Students' Ability, Writing, Narrative Text.*

This research was conducted in order to find out the increasing of students' creativity in developing narrative text through implementing the multiple intelligences station. The research was designed by the quantitative research design. The population of the research was the 160 students of second grade students in MAN 1 BINJAI. The sample of the research was the 25 students of XI-MIA 1 as the experiment class and the 25 students of XI-MIA 4 as the control class. Data collecting instrumets were taken by test which divided into pre-test and post-test. After analyzing the data, the writer found that the experiment class showed the higher average score in the post test. The total score was 1946 with the total average score was 74.85 while the average of the control class was 1685 and the average was 64.81. To examine the hypothesis, the writer used the t-test. From the t-test result was obtained that the calculation presented the  $t_{\text{observed}} > t_{\text{table}}$ , where the  $t_{\text{observed}}$  was 5.940 and the  $t_{\text{table}}$  was 2.021 with  $\alpha = 0.05\%$ . The result of the calculation was quenched the criteria of determining the accepted hypothesis. Therefore, it can be concluded that the implementation of multiple intelligences station increased students' creativity in developing narrative text.

**Acknowledged by:**  
**Advisor I**

**Dr.H. Amiruddin, MS, M.A., M.B.A.,Ph.D.**  
**NIP. 195508280319861008**

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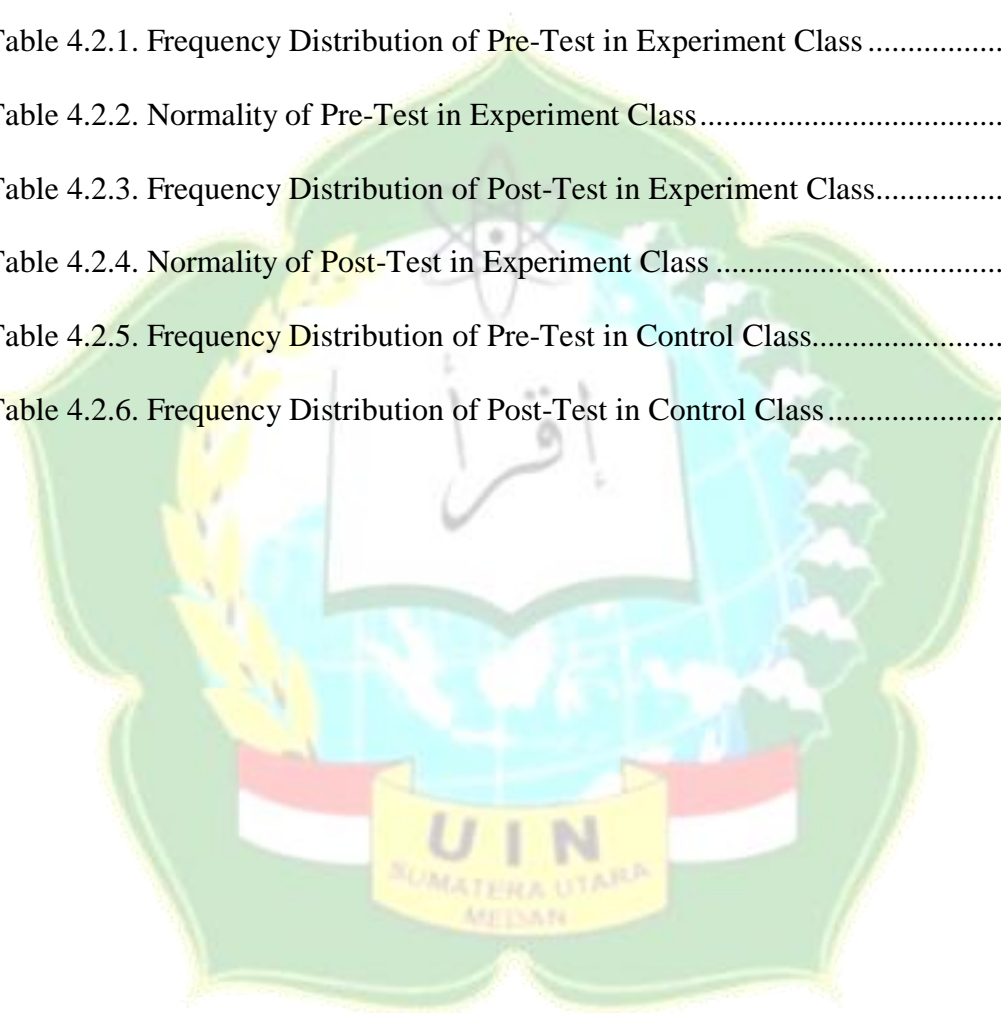
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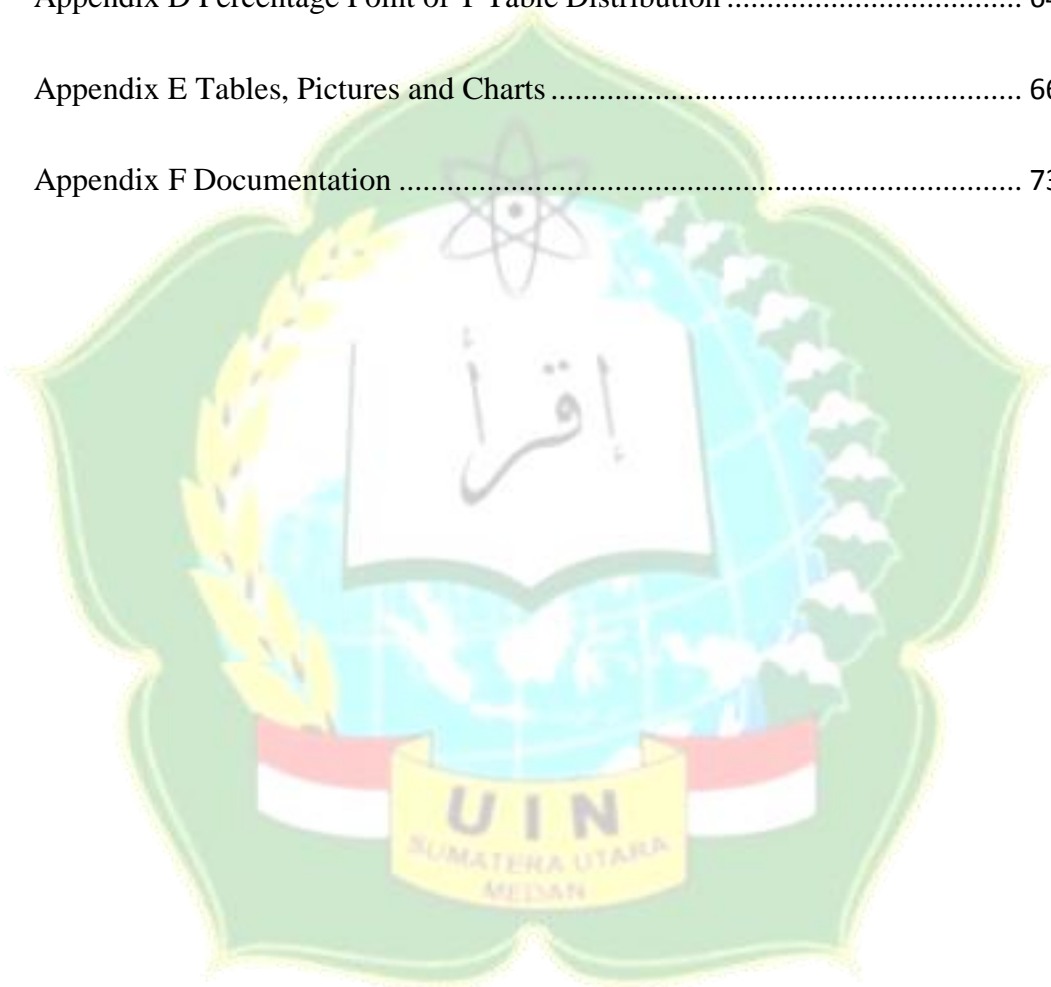
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# CHAPTER I

## INTRODUCTION

### 1.1. Background of Study

Teaching a story by using narrative text can be an interesting activity if the teacher can deliver the material differently than the usual. Narrative text is an imaginative text that purposed to entertain the reader and most of the narrative text always gives the moral lesson that can be precious preaching to the reader.

Most of teachers while delivering the material of narrative text only ask the students to read and then answer the questions related to the story. Sometimes, the teacher only asks the student to translate the narrative text into Indonesia. This learning activity should not be like this, because this only makes the student feel not interested in the learning process and narrative story should be take its essential as an imaginative text that can be developed into various kinds of works.

Writing is considered as an effective way to express idea, thoughts, or feeling when something cannot be uttered directly. In learning English, the writer knows that there are two productive skills and two receptive skills. The two productive skills are speaking and writing, while the receptive skills is reading and listening. Generally, after receiving information, people will produce some kind of new form of information. The information can be an idea, a thought, or expressing feeling.

There are numerous ways to improve students' creativity in developing a text. We can see students' creativity in developing the text based their intelligences.



Multiple intelligences is a kind of which are several intelligences assembled. Someone who has multiple intelligences usually master one or two kinds of the intelligences. To be noted that the multiple intelligences are actually already given all since the human were born in this world, however, not all of the intelligences developed well but everyone were really born with their mastered intelligences innately.

Now days, the school curriculum asked the students to master all of the subjects in the class, but ignoring what actually they have innately. As the teacher we cannot get angry when a student is not good in maths or not good in the English. One thing that we should realize that he/she must be have other things that he/she mastered well.

A student cannot be assessed as stupid or fool when they cannot solve the maths problem, or cannot understand the English well. He/she may be good in music or dance. He/she may be good in understanding other people. These things are often ignored by the teacher.

The students who incapacitate to solve the maths problems do not mean they are dummies. They have the capability but not in big portion. The multiple intelligences consist of several intelligences, namely verbal/linguistics intelligence, logical/ mathematical intelligence, visual/spatial intelligence, musical/rhythmic intelligence, body/kinaesthetic intelligence, naturalist, intrapersonal, and interpersonal intelligence.

Based on the description above, to decide someone' intelligence we can apply a simple test by using a list of questions. Then from the answer we can

conclude which one of the intelligences by looking at the presentation of each intelligence. This instrument often called as the multiple intelligences inventory.

Based on the writer experience, the learning strategy based on multiple intelligences is rare to be implemented by teachers in the class. The writer assumed that this situation happened because the teachers did not know how to implement and integrate the material by multiple intelligences strategy. Since the writer knew that this strategy was also rare to be introduced to the teacher about the implementation in the real situation.

Once in the college period the writer ever had an experience about the implementation of multiple intelligences strategy. This strategy used by the lecturer to develop the narrative text into various ways, based on students' intelligence. The lecturer called this strategy as multiple intelligence station.

The multiple intelligence station is a learning strategy which focused on students' intelligence. Every station should develop the material based on the intelligence they had. In the beginning, the most important thing that should be noticed is the teachers should make an intelligence test. It will make the teacher easy to divide the student into different intelligence station.

This strategy not only can be used in the English subject, but all of the subject can use the strategy. It depends on the teacher how to conduct it in the class, then, by implementing this strategy we can see the greatest students' creativity in developing a text into various works based on their intelligence.

Based on the problems and writer's experience-explanation above, the writer would like to conduct a research about **The Implementation of Multiple Intelligence Station to Improve Students' Ability in Writing Narrative Text at Second Grade Studentd of MAN 1 BINJAI 2016/2017.**

## **1.2. Research Problems**

The research problem is formulated in this question:

**“Is there any significant effect of multiple intelligences station to improve students' ability in writing narrative text at second grade students of man 1 binjai 2016/2017?”**

## **1.3. Objectives of Study**

The aim of the study is:

**“To Improve Students' Ability in Writing Narrative Text through Multiple Intelligences at Second Grade Students of MAN 1 BINJAI 2016/2017”**

## **1.4. The Scope of Study**

The scope of the study is focus on the effect of multiple intelligences station to increase students' ability in writing narrative text based on the eight intelligences.

## **1.5. Definition of Key Terms**

- **Multiple Intelligences:** Multiple intelligences are kinds of several intelligences assembled. Multiple intelligences divided into eight kinds of intelligence. They are verbal/linguistics intelligence,

logical/mathematical intelligence, visual/spatial intelligence, musical intelligence bodily/kinaesthetic intelligence, intrapersonal intelligence, interpersonal intelligence, naturalist intelligence.

- **Multiple Intelligences Station:** The multiple intelligence station is a learning strategy which focused on students' intelligence. Every station should develop the material based on the intelligence they had.
- **Writing:** Writing is a productive activity which mostly done by pouring the thoughts, idea and opinion into a written text.
- **Students' Ability: Students' A**
- **Narrative Text:** Narratives is a text that aimed to entertain the readers and contain of moral lesson.
- **MAN 1 BINJAI:** MAN 1 BINJAI is a senior high school where the subject of study is conducted.

### 1.6. Previous Studies

Aysel Saricaoglu and Arda Arikante, *A Study Of Multiple Intelligences, Foreign Language Success And Some Selected Variables*, Journal of Theory and Practice in Education (ISSN: 1304-9496), 2009, p. 110-122. Based on the report of the research, the aim of this study was to investigate the relationship between students' gender and intelligence types, the relationship between particular intelligence types and students' success in grammar, listening and writing in English as a foreign language and the relationship between parental education and students' types of intelligences. Preparatory class students (n=144) attending Erciyes University's School of Foreign Languages participated in the study and the data was collected through the Multiple Intelligences Inventory for Adults.

Descriptive statistics, independent samples t-test analysis, correlation analysis and one-way analysis of variance (ANOVA) were used to analyze the data. Analysis of the data revealed no significant gender differences in the intelligence types held by the participants except for that between gender and linguistic intelligence which was positive. Negative but significant relationships were found between success in students' test scores in grammar and bodily-kinesthetic, spatial, and intrapersonal intelligences whereas the relationship between musical intelligence and writing was found to be significant and positive. Finally, no significant relationship was found between parental education and students' intelligence types.

### **1.7. Significance of Study**

#### **Theoretically**

- 1) As a reference to the readers who learn about the multiple intelligences.
- 2) As a reference to other research related to multiple intelligences.
- 3) To enrich the knowledge about the implementation of multiple intelligence.
- 4) As a reference to the students to know about their multiple intelligences based on the test given.

#### **Practically**

- 1) Give the readers information about how to implement the multiple intelligences in the class.



- 2) Give others researchers more references about the implementation of multiple intelligences station.
- 3) Give the teacher information about the implementation of multiple intelligences station.
- 4) Give the students chance to sharpen their creativity while developing a narrative text based on their intelligence.
- 5) Give the schools information about the strategy and the implementation of multiple intelligences station.



## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### 2.1. Definition of Writing

Writing is an example of human information processing in action. It is a highly complex task that requires the orchestration of a number of different activities simultaneously and thereby places great demands on the cognitive system. Writing has a communicative function. We write to communicate to others or to communicate to ourselves. In the early stages of writing, when skills are fairly rudimentary, this communicative function may be considerably reduced.<sup>1</sup>

Writing as a process means giving students time to prewrite, write, postwrite, proofread, and edit their papers. It means teaching writing, not just assigning it. It means teaching the various forms of writing so students think through their meaning, their purpose, and the needs of their audience to determine the most appropriate genre. It means encouraging students to collaborate with peers and to discuss their projects with teachers during the writing. It means permitting students to determine to some extent the schedule for completed papers to be submitted to the teacher and subsequently to be published.<sup>2</sup>

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<sup>1</sup> Naomi Flynn and Rhona Stainthorp, *The Learning and Teaching Of Reading And Writing*, (West Sussex: Whurr Publishers Limited, 2006), p. 54-55.

<sup>2</sup> Joyce Armstrong Carroll and Edward E. Wilson, *Acts of Teaching: How to Teach Writing*, (Colorado: Teacher Ideas Press, 1993), p.12

From a short explanation above, it can be concluded that writing is the process of communication which is acting. Writing is a complex communication within the written language.

## 2.2. Multiple Intelligences

Historically, it was assumed that intelligence was a fixed, inherited ability, but research in recent years has frequently suggested that intelligence can change.<sup>3</sup>

On theoretical grounds Spearman in Noel 1998 argued that intelligence involved three distinct components - the apprehension of experience, the education of relations and the education of correlates. 'Apprehension' was described as a lower level ability to recognize the quantitative and qualitative attributes of objects and ideas. 'Education' means a 'drawing out' and Spearman considered that there were two higher level abilities. One of these involved seeing the relationships between two or more objects or ideas (the education of relations) while the other demanded the ability to deduce a property or object which matched another object and a defined relationship (the education of correlates).<sup>4</sup>

In the fast-paced, technology-dense world indwelt by much of the earth's population, the supreme human resource is intelligence. That is because intelligence consists of the knowledge, skills, and strategies necessary to be

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<sup>3</sup> Martyn Long ... [et al.], *The Psychology of Education* (2<sup>nd</sup> ed.), (New York: Routledge, 2011), p. 7.

<sup>4</sup> Noel. J Entwistle, *Styles of Learning and Teaching*, (New York: David Fulton Publisher, 1998), p. 140

effective in a world that is complex and information-rich, a world in which daily life consists largely in a concatenation of problems to be solved. Intelligence shapes the economic prospects of individuals, organizations, and nations. Intelligence also connects to the causes and potential solutions of deep-rooted social problems.<sup>5</sup>

In accordance with the verses in the Quran, Surah Al-Imran: 190 also explains about all human's potential within themselves.

إِنَّ فِي خَلْقِ السَّمَوَاتِ وَالْأَرْضِ وَآخْتِلَافِ اللَّيْلِ وَالنَّهَارِ لَآيَاتٍ  
لِّأُولِي الْأَلْبَابِ ﴿١٩٠﴾

Transliteration:

[190] “In the creation of the heavens and the earth and the in the alternation of the night and the day are indeed Signs for men of understanding.”<sup>6</sup>

According to the proposed theory of human intelligence and its development (Sternberg, 1980, 1984, 1985, 1990, 1997, 1999), a common set of processes underlies all aspects of intelligence. These processes are hypothesized to be universal. For example, although the solutions to problems that are considered intelligent in one culture may be different from the solutions considered to be intelligent in another culture, the need to define problems and translate strategies to solve these problems exists in any culture.

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<sup>5</sup> Michael M. Martinez, *Education as The Cultivation of Intelligence*, (London: Laurence Erlbaum Associates Publisher, 2000), p. 1

<sup>6</sup> *The Holy Qur'an, Translated by Maulawi Sher 'Ali*, (United Kingdom: Islam International Publication, Ltd, 2004), Part 4, Chapter 3, p. 79.

However, although the same processes are used for all three aspects of intelligence universally, these processes are applied to different kinds of tasks and situations depending on whether a given problem requires analytical thinking, practical thinking, creative thinking, or a combination of these kinds of thinking.

*Analytical intelligence. Analytical intelligence is involved when skills are used to analyze, evaluate, judge, or compare and contrast. It typically is involved when processing components are applied to relatively familiar kinds of problems where the judgments to be made are of a fairly abstract nature.*

*Creative intelligence. Creative intelligence is involved when skills are used to create, invent, discover, imagine, suppose, or hypothesize. Tests of creative intelligence go beyond tests of analytical intelligence in measuring performance on tasks that require individuals to deal with relatively novel situations. Sternberg and his colleagues have shown that when one enters the range of unconventionality of the conventional tests of intelligence, one starts to tap sources of individual differences measured little or not at all by the tests (Sternberg, 1985). Thus it is important to include problems that are relatively novel in nature. These problems can be either convergent or divergent in nature.*

*Practical intelligence. Practical intelligence is involved when skills are utilized, implemented, applied, or put into practice in real-world contexts. It involves individuals applying their abilities to the kinds of problems they confront in daily life, such as on the job or in the home. Practical intelligence*



*involves applying the components of intelligence to experience so as to (a) adapt to, (b) shape, and (c) select environments. Adaptation is involved when one changes oneself to suit the environment. Shaping is involved when one changes the environment to suit oneself. And selection is involved when one decides to seek out another environment that is a better match to one's needs, abilities, and desires. People differ in their balance of adaptation, shaping, and selection, and in the competence with which they balance among these three possible courses of action*<sup>7</sup>.

The concept of general ability or intelligence has in the past been the most important single way of accounting for individual differences. It is usually assessed by measuring performance on a test of a number of different skills, using tasks which emphasize reasoning and problem solving in a number of different areas. It can be expressed for an individual as an overall IQ or intelligence quotient. Early assessments of IQ were based on work in France by Alfred Binet in 1905, as part of an attempt to identify children who needed specialist help to make educational progress. At the same time, general academic interest in the concept of intelligence was developing. Spearman (1904) in particular showed that performances on a number of performance tests tended to correlate together and believed that this could be explained by the presence of a general ability factor known as 'g'. This form of testing was continued by Cyril Burt, who became London's first educational psychologist in 1913. Burt set a convenient cut-off criterion of an IQ of 70 for special

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<sup>7</sup> James C. Kaufman, *Intelligent Testing Integrating: Psychological Theory and Clinical Practice*, (New York: Cambridge University Press, 2009), p. 117-118.

schooling, and this was subsequently widely applied for many years by psychologists working in education, both in Britain and in the United States.<sup>8</sup>

Gardner argues that there is persuasive evidence for the existence of several *relatively autonomous* human intellectual competences, abbreviated hereafter as “human intelligences.” The exact nature and breadth of each intellectual “frame” has not so far been satisfactorily established, nor has the precise number of intelligences been fixed. But the conviction that there exist at least some intelligences, that these are relatively independent of one another, and that they can be fashioned and combined in a multiplicity of adaptive ways by individuals and cultures, seems to me to be increasingly difficult to deny.<sup>9</sup>

The theory of multiple intelligences was developed by Harvard professor Howard Gardner in the early 1980s (Gardner, 1983). Gardner argues that traditional ideas about intelligence employed in educational and psychological circles for almost a hundred years require significant reform. In particular, he suggests that the concept of a “pure” intelligence that can be measured by a single IQ score is seriously flawed. Instead, Gardner points out that intelligence is not a singular phenomenon, but rather a plurality of capacities. Drawing on his own observations and those of other scholars from several different disciplines, including anthropology, developmental psychology, animal physiology, brain research, cognitive science, and

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<sup>8</sup> Martyn Long, *The Psychology of Education*, (New York: Routledge Falmer, 2003), p.60

<sup>9</sup> Howard Gardner, *Frames of Mind: The Theory of Multiple Intelligences* (2<sup>nd</sup> ed), (New York: Basic Books, 2011), p.8-9.

biographies of exceptional individuals, Gardner concluded that there were at least seven different types of intelligences that everyone seems to possess to a greater or lesser degree. As the theory evolved, he added an eighth intelligence to this list. Each of intelligence represents a set of capacities that are brought to bear upon two major focuses: the solving of problems, and the fashioning of significant cultural products.<sup>10</sup>

Gardner maintains that there are many ways in which one understands and learns, beyond the measure of the IQ tests. According to Gardner, assessment of the intelligences is valid only if it will help a child understand his or her subject better and allow the educator to decide effective entry points for that particular child. His research suggests that we respond in different ways to different kinds of content, such as math, language, or other people (Checkley, 1997 in Brand and Donato). Some of these ways of knowing or intelligences may be stronger in one individual than in another. Yet these various intelligences work as an integrated whole to accomplish a learning task or problem while simultaneously developing the weaker ones. It has been found that intelligence can be enhanced at any age and occurs in many forms (Lazear, 1991 in Peter Smagorinsky).<sup>11</sup>

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<sup>10</sup> Thomas Armstrong, *The Multiple Intelligences of Reading and Writing : Making the Words Come Alive*, (Virginia: ASCD, 2003 ), p. 12-13.

<sup>11</sup> Susan Trostle Brand and Jeanne M. Donato, *Story Telling in Emergent of Literacy: Fostering Multiple Intelligences*, (New York: Delmar, 2001), p. 16-17.

Those intelligences are:

**2.1.1. Linguistic intelligence:** sensitivity to the sounds, rhythms, and meanings of words, and to the different functions of language. Skilled writers, translators, and (of course) linguists display linguistic intelligence.

**2.1.2. Logical Mathematical intelligence:** a sensitivity to and ability to discern logical or numerical patterns, with the ability to follow or generate long chains of reasoning. Scientists and mathematicians are the most obvious examples of logical/mathematical thinkers; others are lawmakers, philosophical, and scholars.<sup>12</sup>

**2.1.3. Spatial Intelligence.** The ability to perceive the visual world accurately, to perform transformations and modifications upon one's initial perceptions, and to be able to re-create aspects of one's visual experience (even in the absence of the relevant physical stimuli). Examples include the architect, mapmaker, surveyor, inventor, and graphic artist.

**2.1.4. Musical Intelligence.** The ability to understand and express components of music, including melodic and rhythmic patterns, through figural or intuitive means (the natural musician) or through formal analytic

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<sup>12</sup> Peter Smagorinsky, Expression: *Multiple Intelligences in the English Class. Theory and Research in Practice*, (Urbana: National Council of Teachers of English, 1991), p. 8.

means (the professional musician). Examples include the composer, pianist, percussionist, music critic, and singer.<sup>13</sup>

**2.1.5. Bodily/ kinesthetic intelligence:** the use of the body to solve problems or fashion a product, as in Alvin Ailey's interpretation of music through dance or Olga Korbuto's development and performance of floor routines to express her feeling of exuberance. Mimes, surgeons, massage therapists, carpenters, athletes, mechanics, and chiropractors are among those who depend on bodily/kinesthetic intelligence.<sup>14</sup>

**2.1.6. Intrapersonal intelligence:** addresses the development of understanding our inner selves. Self-awareness, self-regulation, self-assessment, and metacognition are skills related to this intelligence (Fogarty 1997 in Susan Trostle Brand). Research findings show that we have the ability to shift from one state of consciousness to another at will; we have hundreds of levels of awareness; we can improve the quality of our own thinking; we possess capacities for controlling many bodily functions that were thought to be automatic; and that creativity is a process that can be learned, improved, and taught throughout our lives (Lazear, 1991 in Susan Trostle Brand).<sup>15</sup>

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<sup>13</sup> Thomas Armstrong, *The Multiple Intelligences of Reading and Writing : Making the Words Come Alive*, Op. Cit, p. 13

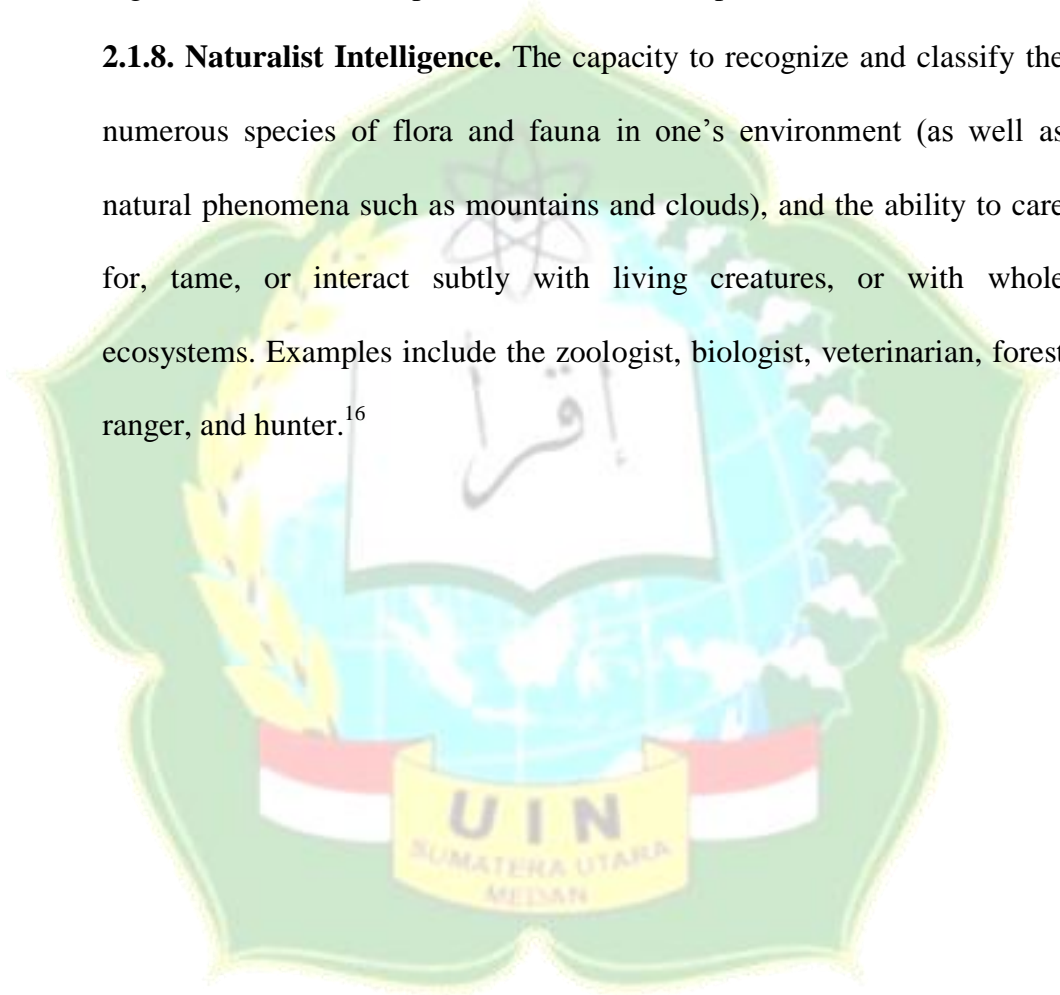
<sup>14</sup> Peter Smagorinsky, *Expression: Multiple Intelligences in the English Class. Theory and Research in Practice*, Op.Cit, p. 9.

<sup>15</sup> Susan Trostle Brand and Jeanne M. Donato, *Story Telling in Emergent of Literacy: Fostering Multiple Intelligences*, Op.Cit, p. 19



**2.1.7. Interpersonal Intelligence.** The ability to notice and make distinctions among other individuals with respect to moods, temperaments, motivations, intentions, and to use this information in pragmatic ways, such as to persuade, influence, manipulate, mediate, or counsel individuals or groups of individuals toward some purpose. Examples include the union organizer, teacher, therapist, administrator, and political leader.

**2.1.8. Naturalist Intelligence.** The capacity to recognize and classify the numerous species of flora and fauna in one's environment (as well as natural phenomena such as mountains and clouds), and the ability to care for, tame, or interact subtly with living creatures, or with whole ecosystems. Examples include the zoologist, biologist, veterinarian, forest ranger, and hunter.<sup>16</sup>



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<sup>16</sup> Thomas Armstrong, *Ibid*, p.14.

Picture 2.2.1. The Multiple Intelligences



**Picture 2.2.2. The Summary of the Eighth Intelligences**

Intelligence Area	Strengths	Preferences	Learns best through	Needs
<b>Verbal / Linguistic</b>	Writing, reading, memorizing dates, thinking in words, telling stories	Write, read, tell stories, talk, memorize, work at solving puzzles	Hearing and seeing words, speaking, reading, writing, discussing and debating	Books, tapes, paper diaries, writing tools, dialogue, discussion, debated, stories, etc.
<b>Mathematical/ Logical</b>	Math, logic, problem-solving, reasoning, patterns	Question, work with numbers, experiment, solve problems	Working with relationships and patterns, classifying, categorizing, working with the abstract	Things to think about and explore, science materials, manipulative, trips to the planetarium and science museum, etc.
<b>Visual / Spatial</b>	Maps, reading charts, drawing, mazes, puzzles, imagining things, visualization	Draw, build, design, create, daydream, look at pictures	Working with pictures and colors, visualizing, using the mind's eye, drawing	LEGOs, video, movies, slides, art, imagination games, mazes, puzzles, illustrated book, trips to art museums, etc.
<b>Bodily / Kinesthetic</b>	Athletics, dancing, crafts, using tools, acting	Move around, touch and talk, body language	Touching, moving, knowledge through bodily sensations, processing	Role-play, drama, things to build, movement, sports and physical games, tactile experiences, hands-on learning, etc.
<b>Musical</b>	Picking up sounds, remembering melodies, rhythms, singing	Sing, play an instrument, listen to music, hum	Rhythm, singing, melody, listening to music and melodies	Sing-along time, trips to concerts, music playing at home and school, musical instruments, etc.
<b>Interpersonal</b>	Leading, organizing, understanding people, communicating, resolving conflicts, selling	Talk to people, have friends, join groups	Comparing, relating, sharing, interviewing, cooperating	Friends, group games, social gatherings, community events, clubs, mentors/ apprenticeships, etc.
<b>Intrapersonal</b>	Recognizing strengths and weaknesses, setting goals, understanding self	Work alone, reflect pursue interests	Working alone, having space, reflecting, doing self-paced projects	Secret places, time alone, self-paced projects, choices, etc.
<b>Naturalistic</b>	Understanding nature, making distinctions, identifying flora and fauna	Be involved with nature, make distinctions	Working in nature, exploring living things, learning about plants and natural events	Order, same/different, connections to real life and science issues, patterns

### 2.3. Multiple Intelligences Station

To define about multiple intelligences station, we should define it one by one either the definition of multiple intelligences or the definition of station itself.

According to Cambridge Learner's dictionary, station definitions are:

1. A building where trains stop so that you can get on or off them (a train).
2. A building where a particular service is based (service)
3. Company that broadcasts television or radio programmes (radio/TV)<sup>17</sup>

<sup>17</sup> Cambridge Learner's Dictionary for Windows (Cambridge University Press, 2004, Version 2.0)

Then, multiple intelligences are the human intelligences capability which are divided in eight intelligences, namely are: linguistics intelligence, logical mathematics intelligence, spatial intelligence, bodily/kinaesthetic intelligence, intrapersonal intelligence, interpersonal intelligence and naturalist intelligences.

Based on the two definitions above, can be concluded that multiple intelligence station is a particular service is based which arranged by the eight multiple intelligence.

#### **2.4. Multiple Intelligences in the Classroom**

The Multiple Intelligences classroom helps students realize how smart they are by providing them with different outlets of learning. More time in planning and preparation might be necessary when using Gardner's theory. The Multiple Intelligences classroom looks different than the typical Linguistic/Mathematical classroom. It requires a few important ingredients such as: "administrative support, student choice in planning, and patience and persistence in working through initial resistance to MI activities by both students and colleagues" (Shearer, 2004, p.10; Shepard, 2004, p. 210 in Andrea Laura HemiProject).<sup>18</sup>

Linda Campbell author of *Teaching & Learning through Multiple Intelligences* describes the following five approaches to adding Multiple Intelligences into the classroom.

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<sup>18</sup> Andrea Laura Heming, *Multiple Intelligences in The Classroom (Thesis)*, (Western Kentucky University Honour College: Fall 2008), p. 10-11

- **Lesson design.** Some schools focus on lesson design. This might involve team teaching ("teachers focusing on their own intelligence strengths"), using all or several of the intelligences in their lessons, or asking student opinions about the best way to teach and learn certain topics.
- **Interdisciplinary units.** Secondary schools often include interdisciplinary units on certain topics.
- **Student projects.** Students can learn to "initiate and manage complex projects" when they are creating student projects.
- **Assessments.** Assessments are devised which allow students to show what they have learned. Sometimes this takes the form of allowing each student to devise the way he or she will be assessed, while meeting the teacher's criteria for quality.
- **Apprenticeships.** Apprenticeships can allow students to "gain mastery of a valued skill gradually, with effort and discipline over time." Gardner feels that apprenticeships "...should take up about one-third of a student's schooling experience" (Guignon,2004).

In using these five ideas, students may decide to express his or her knowledge of that content in one of many different ways (i.e., puppetry, model making, classroom demonstrations, songs, and plays). "The vast amount of time now dedicated to meeting local, state, and national mandates makes it very difficult for even the most ingenious practitioners to devote much time to MI activities. The challenge, at least in the short run, is to absorb MI thinking into the



daily routine, rather than to devote extra time that few have to such pursuits” (Great performances, 2002; Gardner, 2004, p.215).<sup>19</sup>

## 2.6. Narrative Text

Narrative does not have, for example, a singular generic purpose as do some of the other genres. We cannot say that narrative is simply about entertaining a reading audience, although it generally always does so. Narrative also has a powerful social role beyond that of being a medium for entertainment. Narrative is also a powerful medium for changing social opinions and attitudes. Think about the way that some soap operas and television dramas use narrative to raise topical social issues and present their complexities and different perspectives in ways that are not possible in news reports and current affairs programs. Narrative is also a ‘big’ or macro genre in that it can easily accommodate one or more of the other genres and still remain dominant.<sup>20</sup>

Narratives are stories involving a sequence of related events. There are various kinds of relationship between events in a narrative. The most obvious kind is where one event causes another. Such causal connections link one event with another and function partly to give unity to the narrative, and partly to enable the narrative to draw moral conclusions about the consequences of actions.

In the simplest narrative texts, there is a single series of events with causal connections between them. More complex narrative texts might be compounded

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<sup>19</sup> *Ibid*, p. 11.

<sup>20</sup> Peter Knapp and Megan Watkins, *Genre, Text, Grammar: Technologies for Teaching and Assessing Writing*, (Sydney: University of New South Wales, Ltd., 2005), p.220-221.



from simple narratives, with two or more simultaneous narratives (perhaps as plot and sub-plot), or with narratives in sequence that are only loosely connected, perhaps through sharing the same basic character (this is the structure of **picaresque** narratives).<sup>21</sup>

- **Grammatical Features of Narrative**

- a. When sequencing people and events in time and space, narrating typically uses:

- action verbs; for example,

One day the man and his son *went collecting* fire-wood. They *saw* a golden tree. They *went* slowly over to the tree. When they *got* closer to the tree they *heard* a voice *coming* from the tree.

- b. Temporal connectives; for example,

We *then* looked at some games and equipment. *After* lunch we walked up to the *Sydney Morning Herald* and saw how they make papers. *After* that we caught the train back to Marrick ville.

- c. Recounts and stories are typically written in the past tense unless quoting direct speech; for example,

They *were* poor because their pig *ate* them out of house and home and he *didn't share* with the other animals. His name *was* Bob. 'You *should go* on a diet' *said* Clarabelle.

- d. In action sequences, mainly action verbs (bold) are used, while in reflections/evaluations, mental verbs (italicised) predominate; for example,

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<sup>21</sup> Martin Montgomoer... [et.al], *Ways of Reading: Advanced Reading Skill for Students of English Literature*, (New York: Routledge, 2007), p. 251

Bells were ringing, sirens screeching and people were running everywhere. Maria *didn't know* what to do next. She *thought* about her mother and *wondered* what was in her head.

e. Narratives often use action verbs metaphorically to create effective images; for example,

It was a terrible argument. Words were *flying* everywhere.

f. Narratives often use rhythm and repetition to create particular effects; for example,

*Riding. Riding.* The boy went *riding* across the wintery moor, far away from the strife of his unhappy home.

g. Play with sentence structure is another common feature of narratives. Often sentences comprising one word or a short phrase are used to create poignant effects; for example,

*Anger, Silence. As the vengeful brother prowls the streets.* Rose slowly opened the old wooden door. *Dark.* There was nothing but black.<sup>22</sup>

## 2.7. Theoretical Framework

Multiple intelligences are human intelligence capabilities which are divided into eight kinds of intelligence. The eight intelligences are linguistics intelligence, logical mathematics intelligence, spatial intelligence, bodily/kinaesthetic intelligence, intrapersonal intelligence, interpersonal intelligence and naturalist intelligence.

Through multiple intelligence station, the narrative text will be developed based on the eight of intelligences. To develop narrative text the students are free

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<sup>22</sup> *Ibid*, p. 221-222.

to use their creativity to create or compose another narrative text into another form based on the intelligence they have.

In the practice of the classroom, the multiple intelligences station is aimed to explore students' creativity related to the material given. By applying this method, the student also able to increase their major ability and give their best effort and give the outstanding achievement, because they work on what they can do.

Therefore, this study takes the multiple intelligences station to increase their creativity in developing narrative text.

## 2.8. Hypothesis

In the research, hypothesis is defined as the temporarily answer towards the research problem where the research problem has been stated in statement sentence. It is said so, because the answer given only based on the relevant theory, and not based on the fact obtained from data collecting. Therefore, hypothesis also defined as the theoretical answer towards the research problem, not an empirical answer.<sup>23</sup>

Based on the problem and the related theory, the hypothesis is formulated as the following:

1. **Ha :** The multiple intelligences station increased the students' ability in writing narrative text.
2. **Ho :** The multiple intelligences station did not increase students' ability in writing narrative text.

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<sup>23</sup> Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*, (Bandung: Alfabeta, 2010), p. 64.

## CHAPTER III

### RESEARCH METHODOLOGY

#### 3.1. Research Design

The research will be conducted by using the quantitative research design. Quantitative research method defined as the research method which based on the positivism philosophy, used to do research towards population and certain sample, data collecting using the research instrument, the data analysis is quantitatively or statistically in order to examine the hypothesis formulated.<sup>24</sup>

#### 3.2. Research Plan

Based on the research design above, the research plan that would be conducted as following:

**Table. 3.3.1 Research Plans**

No	Meeting	Activity	Note
1	I	Giving Pre-test	Control Class
2	II	<ul style="list-style-type: none"> <li>• Treatment (Conventional method)</li> <li>• Giving Post-test</li> </ul>	Control Class
3	III	Giving Pre-test	Experiment Class
4	IV	Giving Questionnaire	Experiment Class
5	V	<ul style="list-style-type: none"> <li>• Treatment</li> <li>• Making Group (Experiment)</li> </ul>	Experiment Class
6	VI	Performance (Post-test)	Experiment Class

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<sup>24</sup> Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*, Op.Cit, p. 8

### 3.3. Research Location

The research will be located in Madrasah Aliyah Negeri 1 (MAN 1) Binjai which addressed on Jalan Pekanbaru No.1 Binjai. The research will be conducted in the second grade of Madrasah Aliyah Negeri (Grade XI-IA 1).

### 3.4. Population and Sample

#### 3.4.1. Population

Population is the generalization area which consist of object and subject that has the quantity and particular characteristics settled by the researcher to analysed and concluded the.

Therefore, the population is not only the object but also the subject and other things related to the research. The population is not only the numbers of the object studied but also the all of the characteristics preserved by the subject of the object.<sup>25</sup>

The population is also known as the *universe*. The component of population can be a living or non-living things, and human which is the characteristic measured and observed. The population that is unknown for its numbers called as infinitive population and the population that is known for its numbers certainly called as limited population.<sup>26</sup>

Based on the explanation above, the population of this research is all of the students in second grade of science class in MAN 1 Binjai. The population is

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<sup>25</sup> *Ibid*, p. 80.

<sup>26</sup> Syahrums and Salim, *Metodologi Penelitian Kuantitatif*, (Bandung: CitaPustaka Media, 2016), p. 113.



consists of six classes which every classes is forty students. Therefore, the population of this research is 160 students.

**Table 3.3.2. Population of the Research**

<b>Class</b>	<b>Total of the Students</b>
XI-MIA 1	40
XI-MIA 2	40
XI-MIA 3	40
XI-MIA 4	40
<b>Total</b>	<b>160</b>

### 3.4.2. Sample

A sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Design may as well lay down the number of items to be included in the sample i.e., the size of the sample. Sample design is determined before data are collected. There are many sample designs from which a researcher can choose. Some designs are relatively more precise and easier to apply than others. Researcher must select/prepare a sample design which should be reliable and appropriate for his research study.<sup>27</sup>

The sampling technique that uses in the research is **random sampling**. Random sampling from a finite population refers to that method of sample selection which gives each possible sample combination an equal probability of being picked up and each item in the entire population to have an equal chance of being included in the sample. This applies to sampling without replacement i.e., once an item is selected for the sample, it cannot appear in the sample again

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<sup>27</sup> C. R. Kothari, *Research Methodology: Methods and Technique*, (New Delhi: New Age International (P) Ltd., 2004), p. 55-56.



(Sampling with replacement is used less frequently in which procedure the element selected for the sample is returned to the population before the next element is selected. In such a situation the same element could appear twice in the same sample before the second element is chosen). In brief, the implications of random sampling (or simple random sampling) are:

- (a) It gives each element in the population an equal probability of getting into the sample; and all choices are independent of one another.
- (b) It gives each possible sample combination an equal probability of being chosen.<sup>28</sup>

The sample of the research is 25 students from XI-MIA 4 as the control class and 25 students from XI-MIA 1 as the experiment class.

### **3.4. Data Collecting Instruments**

In gaining the data, the researcher attempts to employ these following instruments:

#### **3.4.1. Documentation**

It refers to the archival data that helps the researcher to collect the needed data. The researcher will function the document related to the object research such as; students name list and their English score in previous time. It will help the researcher in doing the experiment. Students' name list and score will be used in determining the team for the experiment. In this case, the data will be gained by the help of the English teacher.

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<sup>28</sup> *Ibid*, p. 60.

### 3.4.2. Test

Test is a set of question and exercises used to measure the achievement or capability of the individual or group. The method is used to get data about score of the pre-test and post-test was given for both of groups. The experiment class and control class. The test used in this research is a fill in test which the students asked to fill the blank are of the

Before the students are taught by the teacher, the student will be given a test- pre-test. Pre- test is given to the experiment class and the control class. This test is given before the experiment is run.

- **Post- test**

Post- test was given to the experiment class and the control class. The test was given in order to know how the implementation of multiple intelligences station could mapping students' creativity in developing narrative text. The post-test was given to the experiment class and control class after received treatment. The experiment class which is class that given the treatment of Multiple Intelligences Station. And the control class taught without the treatment of Multiple Intelligences Station.<sup>29</sup>

The pre-test and the post test of the student were assessing by using the criterion below.

In the Jacobs *et al*, scales, script are rated on aspects of writing: content, organization, vocabulary, language use and mechanics. The five aspects are

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<sup>29</sup>Rusydi Ananda dan Asrul, *Evaluasi Pembelajaran*, (Bandung: Cipta Pustaka Media, 2015), p. 118.

differentially weighted to emphasize first content (30 points) and next language use (25 points), with organization and vocabulary weight equally (20 points), and mechanics very little emphasis (5 points). The following scoring guideline is the Jacobs *et al.*'s scoring profile in Sara Cushing Weigle's book (2002):<sup>30</sup>

### 1. Content

The score of the content depends on the students' ability to write ideas, information, in logical sentences. The criteria of scoring are as determined by ranges of the scores as following:

- |       |  |
|-------|--|
| 30-27 | EXCELLENT TO VEY GOOD: knowledgeable, substantive, through development of thesis, relevant to assigned topic.                          |
| 26-22 | GOOD TO AVERAGE: some knowledge of subject, adequate range, limited development of thesis, mostly relevant to topic, but lacks detail. |
| 21-17 | FAIR TO POOR: limited knowledge of subject, little substance, inadequate development of topic.   |
| 16-13 | VERY POOR: does not show knowledge of subject, non-substantive, not pertinent, or not enough to evaluate.                              |

### 2. Organization

- |       |   |
|-------|---|
| 20-18 | EXCELLENT TO VEY GOOD: fluent expression, ideas clearly stated/supported, succinct, well-organized, logical sequencing, cohesive. |
|-------|---|

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<sup>30</sup>Sara Cushing Weigle, *Assessing Writing*, (Cambridge: Cambridge University Press, 2002), p. 115.

- 17-14 GOOD TO AVERAGE: somewhat choppy, loosely organized but main ideas stand out, limited support, logical but incomplete sequencing.
- 13-10 FAIR TO POOR: non-fluent, ideas confused or disconnected, lack logical sequencing and development.
- 9-7 VERY POOR: does not communicate, no organization, or not enough to evaluate.

### 3. Vocabulary

- 20-18 EXCELLENT TO VEY GOOD: sophisticated range, effective word, idiom choice and usage, word form mastery, appropriate register.
- 17-15 GOOD TO AVERAGE: adequate range, occasional errors of words/idiom form, choice, usage but meaning not obscured.
- 13-11 FAIR TO POOR: limited range, frequent errors of words/idiom form, choice, usage, meaning confused or obscured.
- 9-7 VERY POOR: essentially translation, little knowledge of English vocabulary, idioms, word form, or not enough to evaluate.

### 4. Language Use

- 25-22 EXCELLENT TO VEY GOOD: effective complex construction, few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions.
- 21-18 GOOD TO AVERAGE: effective but simple construction, minor problems in complex constructions, several errors of

agreement, tense, number, word order/function, articles, pronouns, prepositions but meaning seldom obscured.

17-11 FAIR TO POOR: major problem in simple/complex construction, frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, runons, deletion, meaning confused or obscured.

10-5 VERY POOR: virtually no mastery of sentence construction rules, dominated by errors, does not communicate, or not enough to evaluate.

## 5. Mechanics

5 EXCELLENT TO VEY GOOD: demonstrates mastery of conventions, few errors of spelling, punctuation, capitalization, paragraphing.

4 GOOD TO AVERAGE: occasional errors of spelling, punctuation, capitalization, paragraphing but meaning not obscured.

3 FAIR TO POOR: frequent errors of spelling, punctuation, capitalization, paragraphing, poor handwriting, meaning confused or obscured.

2 VERY POOR: no mastery of conventions, dominated by errors of spelling, punctuation, capitalization,, paragraphing, handwriting illegible or not enough to evaluate.<sup>31</sup>

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<sup>31</sup> *Ibid*, p.116



### 3.4.3. Instrument test

Object research such as; students name list and their English score in previous time. It will help the researcher in doing the experiment. Students' name list and score will be used in determining the team for the experiment. In this case, the data will be gained by the help of the English teacher.

An instrument plays an important role in a research in the sense that the reliability of the instrument will influence the reliability of data obtained. Before the collecting the data the writer make instrument such as pre- test, and post-test. In this thesis the writer in concerned with the students' creativity in developing in narrative text at second grade students of MAN 1 Binjai.

### 3.5. Data Analysis Technique

To mapping of the treatment given in the experiment class, the writer used the pre-test and post-test score to compare the students' creativity in developing narrative text. After obtaining the score of the pre-test and post-test, the data were analysed by the t-test formula. The formula was chosen to use for its number of the sample was equal and the number of the variant was different. The t-test formula could be written as following:

$$t = \frac{\bar{X} - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Where:

$\bar{x}$ : average of experimental group

$\bar{x}_2$  : average of control group

$n_1$  : number of experiment group

$n_2$  : number of control group

$s_1^2$ : standard deviation of experiment group

$s_2^2$  : standard deviation of control group

The hypothesis was determined by the following criteria:

Ho is rejected if  $t_{count} > t_{table}$  and Ha is accepted.

Ho is accepted if  $t_{count} < t_{table}$  and Ha is rejected.

To determine the  $t_{table}$  the formulated used is  $dk = n_1 + n_2 - 2$ <sup>32</sup>

Besides the t-test, the data also will be analyzed by using the Normality which gained by applying the Lilliefors Test and the Homogeneity Test by comparing the variants of each data. The homogeneity formula can be written as follows:

$$F_{count} = \frac{\text{Biggest variant}}{\text{Smallest variant}}$$

If  $F_{count} > F_{table}$ , Ho is accepted and Ha is rejected, it means the variant is not homogenous. If  $F_{count} < F_{table}$ , Ho is rejected and Ha is accepted, it means the variant is homogenous.<sup>33</sup>

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<sup>32</sup> Indra Jaya dan Ardat, *Penerapan Statistik untuk Pendidikan*, (Bandung: Citapustaka Media Perintis, 2013), p. 195-196.

<sup>33</sup> *Ibid*, p. 263.

## CHAPTER IV

### RESEARCH FINDING AND DISCUSSION

#### 4.1. Data Description

The data of students' achievement were classified into two kinds, namely the experimental class data and the control class data. The experimental class data were the data which taken in the treatment given class and the control class data were the data which taken in non-treatment given class. The data were obtained by conducting the pre-test and post-test. Each of the test were consist of ten questions.

The score obtained in the test were provided in the table below.

**Table 4.1.1. The Test Result of Experiment Class**

No.	Students' Initial Name	Pre-Test Score	Post-Test Score
1.	AF	63	80
2.	AS	50	75
3.	AST	65	76
4.	ASV	73	76
5.	ASS	70	76
6.	CKA	70	75
7.	DA	65	70
8.	FM	70	78
9.	GPM	75	76
10.	IRA	73	78
11.	KHN	65	75
12.	MDTM	78	86
13.	MIA	65	80
14.	MFY	67	78
15.	MJ	67	75
16.	MM	65	75
17.	MAA	68	80
18.	NHH	75	85
19.	RRST	78	90
20.	RS	55	67
21.	RKH	76	85
22.	SWR	76	85
23.	SHS	68	75

24.	SYI	78	80
25.	ZM	65	70
<b><math>\Sigma</math></b>		<b>1720</b>	<b>1946</b>
<b>Mean</b>		<b>66,15</b>	<b>74,85</b>

As mentioned in the table above, it could be clarified that the average score of the pre-test was 66.15 while the average score of the post-test was 74.85. It could be concluded that there was a significant result between the pre-test and the post-test.

**Table 4.1.2. The Test Result of Control Class**

No.	Students' Initial Name	Pre-Test Score	Post-Test Score
1.	AL	50	60
2.	ALR	55	65
3.	ASM	60	70
4.	DZA	65	70
5.	IF	65	75
6.	ILAA	63	70
7.	LM	55	65
8.	LK	60	60
9.	MTB	73	75
10.	MJ	75	75
11.	MFR	76	75
12.	NDL	65	65
13.	NN	68	70
14.	NZ	65	70
15.	NNST	65	65
16.	PFA	75	75
17.	RN	60	60
18.	RA	55	50
19.	SAK	76	75
20.	SR	75	70
21.	WAN	63	70
22.	WEP	65	65
23.	WY	73	70
24.	TE	65	65
25.	MAIF	53	55
<b><math>\Sigma</math></b>		<b>1620</b>	<b>1685</b>
<b>Mean</b>		<b>62,31</b>	<b>64,81</b>

As the table revealed above, it could be seen that the average score of the pre-test in control class was 62.31 and the post-test was 64.81. It could be concluded that there was not a significant difference between the pre-test and the post test.

From the tables presented above, it can be concluded that the experiment class obtained the higher average score of the post-test than the control class. In the experiment class, the average score of post-test obtained was 74.85 while the average score of the post-test obtained in the control class was 64.81.

It can be concluded that the treatment has helped the students to improve their ability in writing narrative text.

#### 4.2. Data Analysis

As mentioned in the previous chapter, the data would be analyzed by using the Lilliefors test to determine the normality of the data. The analyses were used in order to know whether the data distribution was normal or not. The criterion of normality was decided by the condition if the  $L_o$  (observed)  $< L_t$  (table).

The normality test of the data could be seen as following:

**Table 4.2.1. Frequency Distribution of Pre-Test in Experiment Class**

No	$X_i$	$F_i$	$F_i X_i$	$X_i^2$	$F_i X_i^2$
1	50	1	50	2500	2500
2	55	1	55	3025	3025
3	63	1	63	3969	3969
4	65	6	390	4225	25350
5	67	2	134	4489	8978
6	68	2	136	4624	9248
7	70	3	210	4900	14700
8	73	2	146	5329	10658
9	75	2	150	5625	11250
10	76	2	152	5776	11552
11	78	3	234	6084	18252
$\Sigma$		<b>25</b>	<b>1720</b>	<b>63670</b>	<b>119482</b>



Based on the data above, the result of  $F_i X_i^2$  was 119482 and  $F_i X_i$  was 1720. Then the following is the calculation of mean, variant and standard deviation.

**a. Mean**

Where:

$\bar{x}$  = Mean of variable x

$\sum F_i X_i$  = Total number of score

$\sum F_i$  = Number of sample

Therefore,

$$\begin{aligned} \bar{X} &= \frac{\sum F_i X_i}{\sum F_i} \\ &= \frac{1720}{25} \\ &= 68.8 \end{aligned}$$

**b. Variant**

Where:

$S^2$  = Variant

N = Number of sample

Therefore,

$$\begin{aligned} S^2 &= \frac{n \sum F_i X_i^2 - (\sum F_i X_i)^2}{n(n-1)} \\ &= \frac{25 \times 119482 - (1720)^2}{25(25-1)} \\ &= \frac{2987050 - 2958400}{25(24)} \\ &= \frac{28650}{600} \end{aligned}$$

$$= 47.75$$

**c. Standard Deviation**

$$\begin{aligned} S &= \sqrt{S^2} \\ &= \sqrt{47.75} \\ &= 6.91 \end{aligned}$$

**d. Testing Normality of the Data**

After getting the calculation of mean, variant and standard deviation, then the next step is to found out the normality of the test. It means that the test was given to the students that observed by *Liliefors test*. The computation of normality test can be seen in the following table:

**1. Finding Z score**

$$\text{Formula: } Z_i = \frac{X_i - \bar{X}}{s}$$

$$Z_{i1} = \frac{50 - 68.8}{6.91} = -2.72$$

$$Z_{i2} = \frac{55 - 68.8}{6.91} = -1.99$$

$$Z_{i3} = \frac{63 - 68.8}{6.91} = -0.83$$

$$Z_{i4} = \frac{65 - 68.8}{6.91} = -0.54$$

$$Z_{i5} = \frac{67 - 68.8}{6.91} = -0.26$$

$$Z_{i6} = \frac{68 - 68.8}{6.91} = -0.11$$

$$Z_{i7} = \frac{70 - 68.8}{6.91} = 0.17$$

$$Z_{i8} = \frac{73 - 68.8}{6.91} = 0.60$$

$$Z_{i9} = \frac{75 - 68.8}{6.91} = 0.89$$

$$Z_i 10 = \frac{76 - 68.8}{6.91} = 1.04$$

$$Z_i 11 = \frac{78 - 68.8}{6.91} = 1.33$$

## 2. Finding $S(Z_i)$

$$S(Z_i) = \frac{F_{Kum}}{N}$$

$$\frac{1}{25} = 0.04$$

$$\frac{2}{25} = 0.08$$

$$\frac{3}{25} = 0.12$$

$$\frac{9}{25} = 0.36$$

$$\frac{11}{25} = 0.44$$

$$\frac{13}{25} = 0.52$$

$$\frac{16}{25} = 0.64$$

$$\frac{18}{25} = 0.72$$

$$\frac{20}{25} = 0.8$$

$$\frac{22}{25} = 0.88$$

$$\frac{25}{25} = 1$$



**Table 4.2.2. Normality of The Pre-Test in Experiment Class**

No.	Score	Zi	F(Zi)	S(Zi)	F(Zi) - S(Zi)
1.	50	-2.72	0.003	0.04	-0.037
2.	55	-1.99	0.023	0.08	-0.057
3.	63	-0.83	0.203	0.12	0.083
4.	65	-0.54	0.293	0.36	-0.067
5.	65	-0.54	0.293	0.36	-0.067
6.	65	-0.54	0.293	0.36	-0.067
7.	65	-0.54	0.293	0.36	-0.067
8.	65	-0.54	0.293	0.36	-0.067
9.	65	-0.54	0.293	0.36	-0.067
10.	67	-0.26	0.401	0.44	-0.039
11.	67	-0.26	0.401	0.44	-0.039
12.	68	-0.11	0.460	0.52	-0.06
13.	68	-0.11	0.460	0.52	-0.06
14.	70	0.17	0.567	0.64	-0.073
15.	70	0.17	0.567	0.64	-0.073
16.	70	0.17	0.567	0.64	-0.073
17.	73	0.60	0.725	0.72	0.005
18.	73	0.60	0.725	0.72	0.005
19.	75	0.89	0.773	0.8	-0.027
20.	75	0.89	0.773	0.8	-0.027
21.	76	1.04	0.850	0.88	-0.03
22.	76	1.04	0.850	0.88	-0.03
23.	78	1.33	0.908	1	-0.092
24.	78	1.33	0.908	1	-0.092
25.	78	1.33	0.908	1	-0.092
<b>Total</b>	<b>1720</b>	<b><math>L_o = 0.083</math></b>			
<b>Mean</b>	<b>66,15</b>	<b><math>L_t = 0.173</math></b>			

From the table above, it can be seen that Liliefors observation or  $L_o = 0.085$  with  $n = 25$  and at real level  $\alpha = 0.05$  from the list critical value of Liliefors table  $L_t = 0.173$ . It is known that the coefficient of  $L_o (0.085) < L_t (0.173)$ . It can be

concluded that the data distribution in the pre-test of the implementation of multiple intelligences station was **normal**.

**Table 4.2.3. Frequency Distribution of Post-Test Experiment Class**

No	$X_i$	$F_i$	$F_i X_i$	$X_i^2$	$F_i X_i^2$
1	67	1	67	4489	4489
2	70	2	140	4900	9800
3	75	6	450	5625	33750
4	76	4	304	5776	23104
5	78	3	234	6084	18253
6	80	4	320	6400	25600
7	85	3	255	7225	21657
8	86	1	86	7396	7396
9	90	1	90	8100	8100
<b>Total</b>		<b>25</b>	<b>1946</b>	<b>55995</b>	<b>152149</b>

Based on the data above, the result of  $F_i X_i^2$  was 152149 and  $F_i X_i$  was 1946. Then the following is the calculation of mean, variant and standard deviation.

**a. Mean**

Where:

$\bar{x}$  = Mean of variable x

$\sum F_i X_i$  = Total number of score

$\sum F_i$  = Number of sample

Therefore,

$$\begin{aligned}
 \bar{X} &= \frac{\sum F_i X_i}{\sum F_i} \\
 &= \frac{1946}{25} \\
 &= 77.84
 \end{aligned}$$



### b. Variant

Where:

$$S^2 = \text{Variant}$$

$$N = \text{Number of sample}$$

Therefore,

$$\begin{aligned} S^2 &= \frac{n\sum F_i X_i^2 - (\sum F_i X_i)^2}{n(n-1)} \\ &= \frac{25.152149 - (1946)^2}{25(25-1)} \\ &= \frac{3803725 - 3786916}{25(24)} \\ &= \frac{16809}{600} \\ &= 28.01 \end{aligned}$$

### c. Standard Deviation

$$\begin{aligned} S &= \sqrt{S^2} \\ &= \sqrt{28.01} \\ &= 5.29 \end{aligned}$$

### d. Testing Normality of the Data

After getting the calculation of mean, variant and standard deviation, then the next step is to found out the normality of the test. It means that the test was given to the students that observed by *Liliefors test*. The computation of normality memorizing vocabulary through Silent Way Method can be seen in the following table:

### Finding Z score

$$\text{Formula: } Z_i = \frac{X_i - \bar{X}}{s}$$

$$Z_i 1 = \frac{67-77.84}{5.29} = -2.04$$

$$Z_i 2 = \frac{70-77.84}{5.29} = -1.48$$

$$Z_i 3 = \frac{75-77.84}{5.29} = -0.53$$

$$Z_i 4 = \frac{76-77.84}{5.29} = -0.34$$

$$Z_i 5 = \frac{78-77.84}{5.29} = 0.03$$

$$Z_i 6 = \frac{80-77.84}{5.29} = 0.40$$

$$Z_i 7 = \frac{85-77.84}{5.29} = 1.35$$

$$Z_i 8 = \frac{86-77.84}{5.29} = 1.54$$

$$Z_i 9 = \frac{90-77.84}{5.29} = 2.29$$

### Finding S(Z<sub>i</sub>)

$$S(Z_i) = \frac{F_{Kum}}{N}$$

$$\frac{1}{25} = 0.04$$

$$\frac{3}{25} = 0.12$$

$$\frac{9}{25} = 0.36$$

$$\frac{13}{25} = 0.52$$

$$\frac{16}{25} = 0.64$$

$$\frac{20}{25} = 0.8$$

$$\frac{23}{25} = 0.92$$

$$\frac{24}{25} = 0.96$$

$$\frac{25}{25} = 1$$

**Table 4.2.4. Normality of The Post-Test in Experiment Class**

No.	Score	Zi	F(Zi)	S(Zi)	F(Zi) - S(Zi)
1.	67	-2.04	0.020	0.04	-0.02
2.	70	-1.48	0.069	0.12	-0.051
3.	70	-1.48	0.069	0.12	-0.051
4.	75	-0.53	0.301	0.36	-0.059
5.	75	-0.53	0.301	0.36	-0.059
6.	75	-0.53	0.301	0.36	-0.059
7.	75	-0.53	0.301	0.36	-0.059
8.	75	-0.53	0.301	0.36	-0.059
9.	75	-0.53	0.301	0.36	-0.059
10.	76	-0.34	0.366	0.52	-0.154
11.	76	-0.34	0.366	0.52	-0.154
12.	76	-0.34	0.366	0.52	-0.154
13.	76	-0.34	0.366	0.52	-0.154
14.	78	0.03	0.492	0.64	-0.148
15.	78	0.03	0.492	0.64	-0.148
16.	78	0.03	0.492	0.64	-0.148
17.	80	0.40	0.344	0.8	-0.456
18.	80	0.40	0.344	0.8	-0.456
19.	80	0.40	0.344	0.8	-0.456
20.	80	0.40	0.344	0.8	-0.456
21.	85	1.35	0.911	0.92	-0.009
22.	85	1.35	0.911	0.92	-0.009
23.	85	1.35	0.911	0.92	-0.009
24.	86	1.54	0.938	0.96	-0.002
25.	90	2.29	0.998	1	-0.012
<b>Total</b>	<b>1946</b>	<b>L<sub>o</sub> = -0.154</b>			
<b>Mea n</b>	<b>74,85</b>	<b>L<sub>t</sub> = 0.173</b>			

From the table above, it can be seen that Liliefors observation or  $L_o = -0.154$  with  $n = 25$  and at real level  $\alpha = 0.05$  from the list critical value of Liliefors table  $L_t = 0.173$ . It is known that the coefficient of  $L_o (-0.154) < L_t (0.173)$ . it can be concluded that the data distribution in the post-test of the implementation of multiple intelligences station was **normal**.

To determine the homogeneity of the data, the following calculation would lead to the homogeneity.

**Table 4.2.5. Frequency Distribution of Pre-Test Control Class**

No	$X_i$	$F_i$	$F_i X_i$	$X_i^2$	$F_i X_i^2$
1	50	1	50	2500	2500
2	53	1	53	2809	2809
3	55	3	165	3025	9075
4	60	3	180	3600	10800
5	63	2	126	3969	7938
6	65	7	455	4225	29515
7	68	1	68	4624	4624
8	73	2	146	5329	10658
9	75	3	225	5625	16875
10	76	2	152	5776	11552
<b>Total</b>		<b>25</b>	<b>1620</b>	<b>41482</b>	<b>106346</b>

Based on the data above, the result of  $F_i X_i^2$  was 106346 and  $F_i X_i$  was 1620. Then the following is the calculation of mean, variant and standard deviation.

**a. Mean**

Where:

$\bar{x}$  = Mean of variable x

$\sum F_i X_i$  = Total number of score

$\sum F_i$  = Number of sample

Therefore,

$$\begin{aligned}
 X &= \frac{\sum F_i X_i}{\sum F_i} \\
 &= \frac{1620}{25} \\
 &= 64.8
 \end{aligned}$$

### b. Variant

Where:

$$S^2 = \text{Variant}$$

$$N = \text{Number of sample}$$

Therefore,

$$\begin{aligned}
 S^2 &= \frac{n \sum F_i X_i^2 - (\sum F_i X_i)^2}{n(n-1)} \\
 &= \frac{25 \cdot 106346 - (1620)^2}{25(25-1)} \\
 &= \frac{2658650 - 2624400}{25(24)} \\
 &= \frac{34250}{600} \\
 &= 57.08
 \end{aligned}$$

### c. Standard Deviation

$$\begin{aligned}
 S &= \sqrt{S^2} \\
 &= \sqrt{57.08} \\
 &= 7.55
 \end{aligned}$$

**Table 4.2.6. Frequency Distribution of Post-Test Control Class**

No	$X_i$	$F_i$	$F_i X_i$	$X_i^2$	$F_i X_i^2$
1	50	1	50	2500	2500
2	55	1	55	3025	3025
3	60	3	180	3600	10800
4	65	6	390	4225	25350
5	70	8	560	4900	39200
6	75	6	450	5625	33750
<b>Total</b>		<b>25</b>	<b>1685</b>	<b>23875</b>	<b>114625</b>



Based on the data above, the result of  $F_i X_i^2$  was 114625 and  $F_i X_i$  was 1685. Then the following is the calculation of mean, variant and standard deviation.

**a. Mean**

Where:

$\bar{x}$  = Mean of variable x

$\sum F_i X_i$  = Total number of score

$\sum F_i$  = Number of sample

Therefore,

$$\begin{aligned} \bar{X} &= \frac{\sum F_i X_i}{\sum F_i} \\ &= \frac{1685}{25} \\ &= 67.4 \end{aligned}$$

**b. Variant**

Where:

$S^2$  = Variant

N = Number of sample

Therefore,

$$\begin{aligned} S^2 &= \frac{n \sum F_i X_i^2 - (\sum F_i X_i)^2}{n(n-1)} \\ &= \frac{25 \cdot 114625 - (1685)^2}{25(25-1)} \\ &= \frac{2865625 - 2839255}{25(24)} \\ &= \frac{26370}{600} \\ &= 43.95 \end{aligned}$$

### c. Standard Deviation

$$\begin{aligned} S &= \sqrt{S^2} \\ &= \sqrt{43.95} \\ &= 6.62 \end{aligned}$$

As the calculation result above, the homogeneity could be obtained as below:

$$F_{count} = \frac{\text{Biggest variant}}{\text{Smallest variant}}$$

$$F_{count} = \frac{6.62}{5.29}$$

$$F_{count} = 1.251$$

From the result above, the  $F_{count} = 1.251$  with  $df = 25-1 = 24$ , the  $F_{table} = 1.984$ . The biggest variant was obtained from the variant in the post-test data of the control class and the smallest variant was obtained from the variant in the post-test of the experiment class. The value obtained above showed the  $F_{count} (1.252) < F_{table} (1.984)$  which mean that the variants of the data were **homogenous**.

### 4.3. Test of Hypothesis

To mapping of the treatment given in the experiment class, the writer used the pre-test and post-test score to compare the students' creativity in developing narrative text. After obtaining the score of the pre-test and post-test, the data were analysed by the t-test formula. The formula was chosen to use for its number of the sample was equal and the number of the variant was different. The t-test formula could be written as following:

$$t = \frac{\bar{X} - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

The hypothesis formulated in the chapter two could be written as following:

1. **Ha :** The multiple intelligences station improved the students' ability in writing narrative text.
2. **Ho :** The multiple intelligences station did not improve students' ability in writing narrative text.

The hypothesis above was determined and examined by the following criteria:

Ho is rejected if  $t_{observed} > t_{table}$  and Ha is accepted.

Ho is accepted if  $t_{observed} < t_{table}$  and Ha is rejected.

To determine the  $t_{table}$  the formulated used is  $df = n_1 + n_2 - 2$

	Experiment Class Post Test(X)	Control Class Post-Test(X <sub>2</sub> )
<b>Mean</b>	74.85	64.81
<b>Variant</b>	28.01	43.95
<b>Standard Deviation</b>	5.29	6.62

The calculation of t-test could be seen as following:

$$t = \frac{\bar{X} - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

$$t = \frac{74.85 - 64.81}{\sqrt{\frac{28.01}{25} + \frac{43.59}{25}}}$$

$$t = \frac{10.04}{\sqrt{1.1204 + 1.7436}}$$

$$t = \frac{10.04}{\sqrt{2.864}}$$

$$t = \frac{10.04}{1.69}$$

$$t = 5.940$$

After the scores were calculated, it was found that in this study the  $t_{\text{observed}}$  was higher than the  $t_{\text{table}}$ . It could be seen as follow:

$$t_{\text{observed}} > t_{\text{table}} (\alpha = 0.05) \text{ with df } 48$$

$$5.940 > 2.021$$

The first hypothesis:

**H<sub>a</sub>** : The multiple intelligences station increased the students' ability in writing narrative text.

**H<sub>o</sub>** : The multiple intelligences station did not increase students' ability in writing narrative text.

From the calculation above, it showed that the alternative hypothesis ( $H_a$ ) was accepted and the null hypothesis ( $H_o$ ) was rejected.  $t_{\text{observed}} > t_{\text{table}} (\alpha = 0.05) \text{ with df } 48$  .  $t_{\text{observed}} (5.940) > t_{\text{table}} (2.021)$ . Then, it can be concluded that the implementation of multiple intelligences could increase students' ability in writing narrative text.

#### 4.4. Discussion

Based on the data obtained above, the control class obtained the average score of pre-test was 62.31 and the post-test was 64.81. It might be seen that there was not significant increasing in students' creativity while developing narrative text by implementing the conventional method.

On the other hand, the experiment class obtained the average score of the pre-test was 66.15 and the post test was 74.85. From the data, it might be seen there was a significant increasing the average score of the post-test after implementing the multiple intelligences station. The post-test of the students' also showed various kinds of story writing. The writing was corresponding to the intelligences they had, therefore the narrative text transformed into many kind story genre of narrative text.

To know the distribution of the data, the writer used the Lilliefors test to see where the data distributed normally or not. The result obtained show that the normality in the pre-test of the experiment class showed  $L_o = 0.083$  and  $L_t = 0.173$  which implies that the  $L_o (0.083) < L_t (0.173)$ . It could be concluded that the data were distributed normally.

The homogeneity test used to see whether both of the data were homogenous or not. From the calculation was obtained the  $F_{count} = 1.251$  (with  $df_{25-1=24}$ ) and  $F_{table} = 1.984$  which implies that the  $F_{count} (1.251) < F_{table} (1.984)$ . It could be concluded that the data were homogenous.

Consistently, by examining the hypothesis which was analysed by the t-test formula. It was found that by implementing the multiple intelligences station

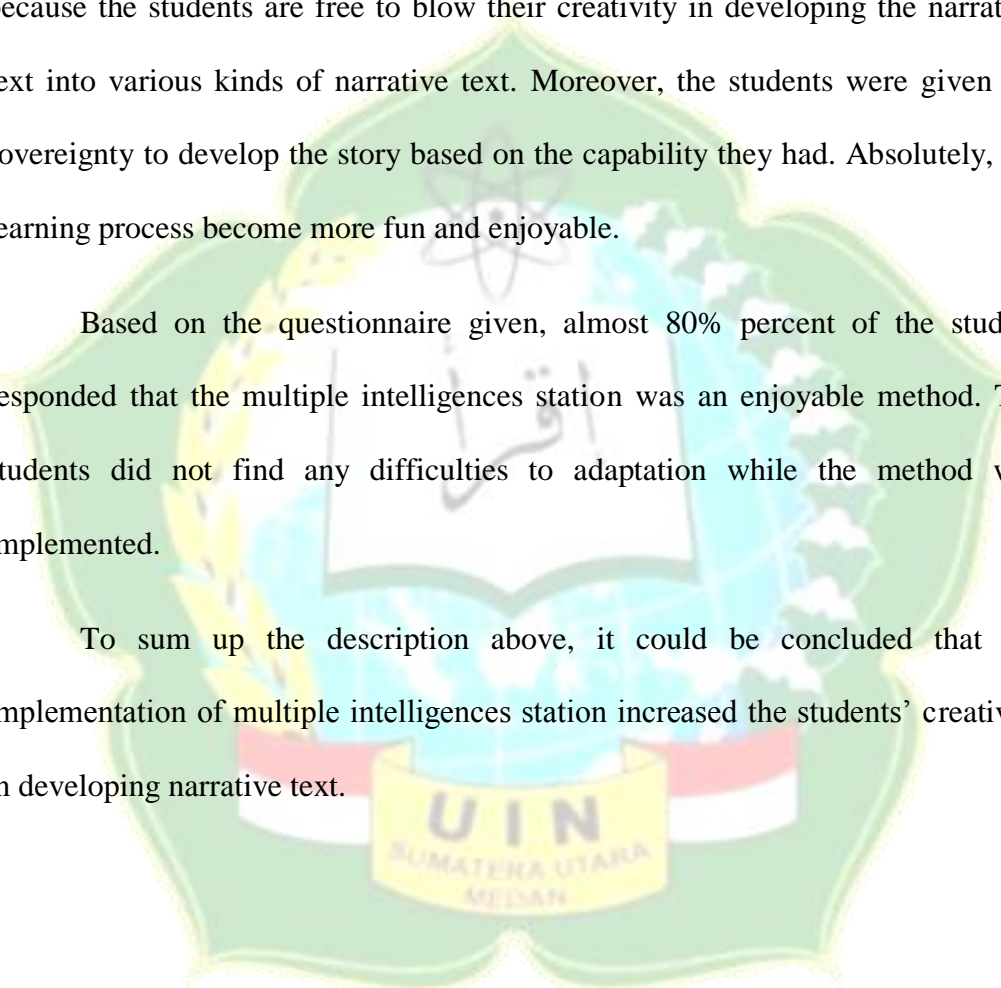


increase students' creativity in developing narrative text. The result of the calculation revealed that the  $t_{\text{observed}} > t_{\text{table}}$ , where the  $t_{\text{observed}}$  was 5.940 and the  $t_{\text{table}}$  was 2.021 with  $\alpha = 0.05\%$ .

From the research that has been conducted by the writer, it found that the students seemed enjoy to learn with the multiple intelligences station. It was because the students are free to blow their creativity in developing the narrative text into various kinds of narrative text. Moreover, the students were given the sovereignty to develop the story based on the capability they had. Absolutely, the learning process become more fun and enjoyable.

Based on the questionnaire given, almost 80% percent of the student responded that the multiple intelligences station was an enjoyable method. The students did not find any difficulties to adaptation while the method was implemented.

To sum up the description above, it could be concluded that the implementation of multiple intelligences station increased the students' creativity in developing narrative text.



## CHAPTER V

### CONCLUSION AND SUGGESTION

#### 5.1. Conclusion

Based on the formulation of the study and the data analysis the research was concluded that the implementation of multiple intelligences station increased students' creativity in developing narrative text. The improvement of the score showed that the post-test of the experiment class obtained higher score than the post-test of the control class. The total average score of the experiment class was 66.15 for the pre-test and 74.85 for the post-test, whereas the average score of the control class was 62.31 for the pre-test and 64.81 for the post test. The experiment class revealed that there was a significant improvement of the score after implementing the multiple intelligences station if compared with the conventional method which did not show a significant improvement of the score. Constantly, the t-test score was also revealed the same. From the t-test result was obtained that the calculation presented the  $t_{\text{observed}} > t_{\text{table}}$ , where the  $t_{\text{observed}}$  was 5.940 and the  $t_{\text{table}}$  was 1.984 with  $\alpha = 0.05\%$ . The result of the calculation was quenched the criteria of determining the accepted hypothesis. It was said that  $H_0$  is rejected if  $t_{\text{observed}} > t_{\text{table}}$  and  $H_a$  is accepted. From the criteria, the result obtained has gratified the criteria. For that reason, the alternative hypothesis ( $H_a$ ) was accepted that the implementation of multiple intelligences increased students' creativity in developing narrative text.

Based on the description of the chart in the chapter IV, it was found that the students did not find any difficulties while the writer implementing the multiple intelligences station in the learning process. The students also confirmed that the multiple intelligences station method were fun and enjoyable. For that reason, the multiple intelligences were adaptable to students in order to increase their creativity in developing narrative text.

To sum up, the implementation of multiple intelligences station increased students' creativity in developing narrative text and the multiple intelligences station were adaptable to students in the learning process of developing narrative text.

## **5.2. Suggestion**

This study showed that the implementation of multiple intelligences station increased students' creativity in developing narrative text. In relation above, some points are suggested.

1. For the principal of MAN 1 BINJAI should facilitate the teacher by teaching workshop, so the teachers could update the teaching method in the class and could create the fun learning in the class that attracted students' participation and attention.
2. For the teachers of English at Senior High School should be creative to variate the teaching method. By varying the teaching method, the student will be more interested in the learning process and could actively involved in the learning environment.

3. For the students no need to be shy to express your imagination and your creativity in writing, because without writing your imagination will just dumb in your head.

Finally, the writer considers that the study still needs validity from the next researcher that has the similar topic with this study.



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## APPENDIX

### Appendix A

#### Multiple Intelligences Inventory



## Appendix B

### The Critical Value *Lilliefors* Test

$n \backslash \alpha$	0.01	0.05	0.10	0.15	0.20
4	0.417	0.381	0.352	0.319	0.300
5	0.405	0.337	0.315	0.299	0.285
6	0.364	0.319	0.294	0.277	0.265
7	0.348	0.300	0.276	0.258	0.247
8	0.331	0.285	0.261	0.244	0.233
9	0.311	0.271	0.249	0.233	0.223
10	0.294	0.258	0.239	0.224	0.215
11	0.284	0.249	0.230	0.217	0.206
12	0.275	0.242	0.223	0.212	0.199
13	0.268	0.234	0.214	0.202	0.190
14	0.261	0.227	0.207	0.194	0.183
15	0.257	0.220	0.201	0.187	0.177
16	0.250	0.213	0.195	0.182	0.173
17	0.245	0.206	0.189	0.177	0.169
18	0.239	0.200	0.184	0.173	0.166
19	0.235	0.195	0.179	0.169	0.163
20	0.231	0.190	0.174	0.166	0.160
25	0.203	0.180	0.165	0.153	0.149
30	0.187	0.161	0.144	0.136	0.131
<b>OVER 30</b>	1.031	0.886	0.805	0.768	0.736
	$\sqrt{n}$	$\sqrt{n}$	$\sqrt{n}$	$\sqrt{n}$	$\sqrt{n}$

## Appendix C

Critical Values of  $F$  Distribution

**TABLE A-5**  $F$  Distribution ( $\alpha = 0.05$  in the right tail) (*continued*)

	Numerator degrees of freedom ( $df_1$ )									
	10	12	15	20	24	30	40	60	120	( $\infty$ )
1	241.88	243.91	245.95	248.01	249.05	250.10	251.14	252.20	253.25	254.31
2	19.396	19.413	19.429	19.446	19.454	19.462	19.471	19.479	19.487	19.496
3	8.7855	8.7446	8.7029	8.6602	8.6385	8.6166	8.5944	8.5720	8.5494	8.5264
4	5.9644	5.9117	5.8578	5.8025	5.7744	5.7459	5.7170	5.6877	5.6581	5.6281
5	4.7351	4.6777	4.6188	4.5581	4.5272	4.4957	4.4638	4.4314	4.3985	4.3650
6	4.0600	3.9999	3.9381	3.8742	3.8415	3.8082	3.7743	3.7398	3.7047	3.6689
7	3.6365	3.5747	3.5107	3.4445	3.4105	3.3758	3.3404	3.3043	3.2674	3.2298
8	3.3472	3.2839	3.2184	3.1503	3.1152	3.0794	3.0428	3.0053	2.9669	2.9276
9	3.1373	3.0729	3.0061	2.9365	2.9005	2.8637	2.8259	2.7872	2.7475	2.7067
10	2.9782	2.9130	2.8450	2.7740	2.7372	2.6996	2.6609	2.6211	2.5801	2.5379
11	2.8536	2.7876	2.7186	2.6464	2.6090	2.5705	2.5309	2.4901	2.4480	2.4045
12	2.7534	2.6866	2.6169	2.5436	2.5055	2.4663	2.4259	2.3842	2.3410	2.2962
13	2.6710	2.6037	2.5331	2.4589	2.4202	2.3803	2.3392	2.2966	2.2524	2.2064
14	2.6022	2.5342	2.4630	2.3879	2.3487	2.3082	2.2664	2.2229	2.1778	2.1307
15	2.5437	2.4753	2.4034	2.3275	2.2878	2.2468	2.2043	2.1601	2.1141	2.0658
16	2.4935	2.4247	2.3522	2.2756	2.2354	2.1938	2.1507	2.1058	2.0589	2.0096
17	2.4499	2.3807	2.3077	2.2304	2.1898	2.1477	2.1040	2.0584	2.0107	1.9604
18	2.4117	2.3421	2.2686	2.1906	2.1497	2.1071	2.0629	2.0166	1.9681	1.9168
19	2.3779	2.3080	2.2341	2.1555	2.1141	2.0712	2.0264	1.9795	1.9302	1.8780
20	2.3479	2.2776	2.2033	2.1242	2.0825	2.0391	1.9938	1.9464	1.8963	1.8432
21	2.3210	2.2504	2.1757	2.0960	2.0540	2.0102	1.9645	1.9165	1.8657	1.8117
22	2.2967	2.2258	2.1508	2.0707	2.0283	1.9842	1.9380	1.8894	1.8380	1.7831
23	2.2747	2.2036	2.1282	2.0476	2.0050	1.9605	1.9139	1.8648	1.8128	1.7570
24	2.2547	2.1834	2.1077	2.0267	1.9838	1.9390	1.8920	1.8424	1.7896	1.7330
25	2.2365	2.1649	2.0889	2.0075	1.9643	1.9192	1.8718	1.8217	1.7684	1.7110
26	2.2197	2.1479	2.0716	1.9898	1.9464	1.9010	1.8533	1.8027	1.7488	1.6906
27	2.2043	2.1323	2.0558	1.9736	1.9299	1.8842	1.8361	1.7851	1.7306	1.6717
28	2.1900	2.1179	2.0411	1.9586	1.9147	1.8687	1.8203	1.7689	1.7138	1.6541
29	2.1768	2.1045	2.0275	1.9446	1.9005	1.8543	1.8055	1.7537	1.6981	1.6376
30	2.1646	2.0921	2.0148	1.9317	1.8874	1.8409	1.7918	1.7396	1.6835	1.6223
40	2.0772	2.0035	1.9245	1.8389	1.7929	1.7444	1.6928	1.6373	1.5766	1.5089
60	1.9926	1.9174	1.8364	1.7480	1.7001	1.6491	1.5943	1.5343	1.4673	1.3893
120	1.9105	1.8337	1.7505	1.6587	1.6084	1.5543	1.4952	1.4290	1.3519	1.2539
( $\infty$ )	1.8307	1.7522	1.6664	1.5705	1.5173	1.4591	1.3940	1.3180	1.2214	1.0000

From Maxine Merrington and Catherine M. Thompson, "Tables of Percentage Points of the Inverted Beta ( $F$ ) Distribution," *Biometrika* 33 (1943): 80-84. Reproduced with permission of the Biometrika Trustees.



## Appendix D

Percentage Points of the *T* Distribution

DF	0.80 0.20	0.90 0.10	0.95 0.05	0.98 0.02	0.99 0.01	0.995 0.005	0.998 0.002	0.999 0.001
1	3.078	6.314	12.706	31.820	63.657	127.321	318.309	636.619
2	1.886	2.920	4.303	6.965	9.925	14.089	22.327	31.599
3	1.638	2.353	3.182	4.541	5.841	7.453	10.215	12.924
4	1.533	2.132	2.776	3.747	4.604	5.598	7.173	8.610
5	1.476	2.015	2.571	3.365	4.032	4.773	5.893	6.869
6	1.440	1.943	2.447	3.143	3.707	4.317	5.208	5.959
7	1.415	1.895	2.365	2.998	3.499	4.029	4.785	5.408
8	1.397	1.860	2.306	2.897	3.355	3.833	4.501	5.041
9	1.383	1.833	2.262	2.821	3.250	3.690	4.297	4.781
10	1.372	1.812	2.228	2.764	3.169	3.581	4.144	4.587
11	1.363	1.796	2.201	2.718	3.106	3.497	4.025	4.437
12	1.356	1.782	2.179	2.681	3.055	3.428	3.930	4.318
13	1.350	1.771	2.160	2.650	3.012	3.372	3.852	4.221
14	1.345	1.761	2.145	2.625	2.977	3.326	3.787	4.140
15	1.341	1.753	2.131	2.602	2.947	3.286	3.733	4.073
16	1.337	1.746	2.120	2.584	2.921	3.252	3.686	4.015
17	1.333	1.740	2.110	2.567	2.898	3.222	3.646	3.965
18	1.330	1.734	2.101	2.552	2.878	3.197	3.610	3.922
19	1.328	1.729	2.093	2.539	2.861	3.174	3.579	3.883
20	1.325	1.725	2.086	2.528	2.845	3.153	3.552	3.850
21	1.323	1.721	2.080	2.518	2.831	3.135	3.527	3.819
22	1.321	1.717	2.074	2.508	2.819	3.119	3.505	3.792
23	1.319	1.714	2.069	2.500	2.807	3.104	3.485	3.768
24	1.318	1.711	2.064	2.492	2.797	3.090	3.467	3.745
25	1.316	1.708	2.060	2.485	2.787	3.078	3.450	3.725
26	1.315	1.706	2.056	2.479	2.779	3.067	3.435	3.707
27	1.314	1.703	2.052	2.473	2.771	3.057	3.421	3.690



<b>28</b>	1.313	1.701	2.048	2.467	2.763	3.047	3.408	3.674
<b>29</b>	1.311	1.699	2.045	2.462	2.756	3.038	3.396	3.659
<b>30</b>	1.310	1.697	2.042	2.457	2.750	3.030	3.385	3.646
<b>31</b>	1.309	1.695	2.040	2.453	2.744	3.022	3.375	3.633
<b>32</b>	1.309	1.694	2.037	2.449	2.738	3.015	3.365	3.622
<b>33</b>	1.308	1.692	2.035	2.445	2.733	3.008	3.356	3.611
<b>34</b>	1.307	1.691	2.032	2.441	2.728	3.002	3.348	3.601
<b>35</b>	1.306	1.690	2.030	2.438	2.724	2.996	3.340	3.591
<b>36</b>	1.306	1.688	2.028	2.434	2.719	2.991	3.333	3.582
<b>37</b>	1.305	1.687	2.026	2.431	2.715	2.985	3.326	3.574
<b>38</b>	1.304	1.686	2.024	2.429	2.712	2.980	3.319	3.566
<b>39</b>	1.304	1.685	2.023	2.426	2.708	2.976	3.313	3.558
<b>40</b>	1.303	1.684	2.021	2.423	2.704	2.971	3.307	3.551
<b>42</b>	1.302	1.682	2.018	2.418	2.698	2.963	3.296	3.538
<b>44</b>	1.301	1.680	2.015	2.414	2.692	2.956	3.286	3.526
<b>46</b>	1.300	1.679	2.013	2.410	2.687	2.949	3.277	3.515
<b>48</b>	1.299	1.677	2.011	2.407	2.682	2.943	3.269	3.505
<b>50</b>	1.299	1.676	2.009	2.403	2.678	2.937	3.261	3.496
<b>60</b>	1.296	1.671	2.000	2.390	2.660	2.915	3.232	3.460
<b>70</b>	1.294	1.667	1.994	2.381	2.648	2.899	3.211	3.435
<b>80</b>	1.292	1.664	1.990	2.374	2.639	2.887	3.195	3.416
<b>90</b>	1.291	1.662	1.987	2.369	2.632	2.878	3.183	3.402
<b>100</b>	1.290	1.660	1.984	2.364	2.626	2.871	3.174	3.391
<b>120</b>	1.289	1.658	1.980	2.358	2.617	2.860	3.160	3.373
<b>150</b>	1.287	1.655	1.976	2.351	2.609	2.849	3.145	3.357
<b>200</b>	1.286	1.652	1.972	2.345	2.601	2.839	3.131	3.340
<b>300</b>	1.284	1.650	1.968	2.339	2.592	2.828	3.118	3.323
<b>500</b>	1.283	1.648	1.965	2.334	2.586	2.820	3.107	3.310
	1.282	1.645	1.960	2.326	2.576	2.807	3.090	3.291

## Appendix E

## TABLES, PICTURES AND CHARTS

Picture 2.2.1. The Multiple Intelligences



**Picture 2.2.2. The Summary of the Eighth Intelligences**

Intelligence Area	Strengths	Preferences	Learns best through	Needs
<b>Verbal / Linguistic</b>	Writing, reading, memorizing dates, thinking in words, telling stories	Write, read, tell stories, talk, memorize, work at solving puzzles	Hearing and seeing words, speaking, reading, writing, discussing and debating	Books, tapes, paper diaries, writing tools, dialogue, discussion, debated, stories, etc.
<b>Mathematical/ Logical</b>	Math, logic, problem-solving, reasoning, patterns	Question, work with numbers, experiment, solve problems	Working with relationships and patterns, classifying, categorizing, working with the abstract	Things to think about and explore, science materials, manipulative, trips to the planetarium and science museum, etc.
<b>Visual / Spatial</b>	Maps, reading charts, drawing, mazes, puzzles, imagining things, visualization	Draw, build, design, create, daydream, look at pictures	Working with pictures and colors, visualizing, using the mind's eye, drawing	LEGOs, video, movies, slides, art, imagination games, mazes, puzzles, illustrated book, trips to art museums, etc.
<b>Bodily / Kinesthetic</b>	Athletics, dancing, crafts, using tools, acting	Move around, touch and talk, body language	Touching, moving, knowledge through bodily sensations, processing	Role-play, drama, things to build, movement, sports and physical games, tactile experiences, hands-on learning, etc.
<b>Musical</b>	Picking up sounds, remembering melodies, rhythms, singing	Sing, play an instrument, listen to music, hum	Rhythm, singing, melody, listening to music and melodies	Sing-along time, trips to concerts, music playing at home and school, musical instruments, etc.
<b>Interpersonal</b>	Leading, organizing, understanding people, communicating, resolving conflicts, selling	Talk to people, have friends, join groups	Comparing, relating, sharing, interviewing, cooperating	Friends, group games, social gatherings, community events, clubs, mentors/ apprenticeships, etc.
<b>Intrapersonal</b>	Recognizing strengths and weaknesses, setting goals, understanding self	Work alone, reflect pursue interests	Working alone, having space, reflecting, doing self-paced projects	Secret places, time alone, self-paced projects, choices, etc.
<b>Naturalistic</b>	Understanding nature, making distinctions, identifying flora and fauna	Be involved with nature, make distinctions	Working in nature, exploring living things, learning about plants and natural events	Order, same/different, connections to real life and science issues, patterns

**Table 3.3.1. Population of the Research**

Class	Total of the Students
XI-MIA 1	40
XI-MIA 2	40
XI-MIA 3	40
XI-MIA 4	40
<b>Total</b>	<b>160</b>

**Table 4.1.1. The Test Result of Experiment Class**

No.	Students' Initial Name	Pre-Test Score	Post-Test Score
1.	AF	63	80
2.	AS	50	75
3.	AST	65	76
4.	ASV	73	76
5.	ASS	70	76
6.	CKA	70	75
7.	DA	65	70
8.	FM	70	78
9.	GPM	75	76
10.	IRA	73	78
11.	KHN	65	75
12.	MDTM	78	86
13.	MIA	65	80
14.	MFY	67	78
15.	MJ	67	75
16.	MM	65	75
17.	MAA	68	80
18.	NHH	75	85
19.	RRST	78	90
20.	RS	55	67
21.	RKH	76	85
22.	SWR	76	85
23.	SHS	68	75
24.	SYI	78	80
25.	ZM	65	70
<b><math>\Sigma</math></b>		<b>1720</b>	<b>1946</b>
<b>Mean</b>		<b>66,15</b>	<b>74,85</b>

**Table 4.1.2. The Test Result of Control Class**

No.	Students' Initial Name	Pre-Test Score	Post-Test Score
1.	AL	50	60
2.	ALR	55	65
3.	ASM	60	70
4.	DZA	65	70
5.	IF	65	75
6.	ILAA	63	70
7.	LM	55	65
8.	LK	60	60
9.	MTB	73	75
10.	MJ	75	75
11.	MFR	76	75
12.	NDL	65	65

13.	NN	68	70
14.	NZ	65	70
15.	NNST	65	65
16.	PFA	75	75
17.	RN	60	60
18.	RA	55	50
19.	SAK	76	75
20.	SR	75	70
21.	WAN	63	70
22.	WEP	65	65
23.	WY	73	70
24.	TE	65	65
25.	MAIF	53	55
<b><math>\Sigma</math></b>		<b>1620</b>	<b>1685</b>
<b>Mean</b>		<b>62,31</b>	<b>64,81</b>

**Table 4.2.1. Frequency Distribution of Pre-Test in Experiment Class**

No	$X_i$	$F_i$	$F_i X_i$	$X_i^2$	$F_i X_i^2$
1	50	1	50	2500	2500
2	55	1	55	3025	3025
3	63	1	63	3969	3969
4	65	6	390	4225	25350
5	67	2	134	4489	8978
6	68	2	136	4624	9248
7	70	3	210	4900	14700
8	73	2	146	5329	10658
9	75	2	150	5625	11250
10	76	2	152	5776	11552
11	78	3	234	6084	18252
<b><math>\Sigma</math></b>		<b>25</b>	<b>1720</b>	<b>63670</b>	<b>119482</b>

**Table 4.2.2. Normality of The Pre-Test in Experiment Class**

No.	Score	$Z_i$	$F(Z_i)$	$S(Z_i)$	$F(Z_i) - S(Z_i)$
1.	50	-2.72	0.003	0.04	-0.037
2.	55	-1.99	0.023	0.08	-0.057
3.	63	-0.83	0.203	0.12	0.083
4.	65	-0.54	0.293	0.36	-0.067
5.	65	-0.54	0.293	0.36	-0.067
6.	65	-0.54	0.293	0.36	-0.067
7.	65	-0.54	0.293	0.36	-0.067
8.	65	-0.54	0.293	0.36	-0.067
9.	65	-0.54	0.293	0.36	-0.067

10.	67	-0.26	0.401	0.44	-0.039
11.	67	-0.26	0.401	0.44	-0.039
12.	68	-0.11	0.460	0.52	-0.06
13.	68	-0.11	0.460	0.52	-0.06
14.	70	0.17	0.567	0.64	-0.073
15.	70	0.17	0.567	0.64	-0.073
16.	70	0.17	0.567	0.64	-0.073
17.	73	0.60	0.725	0.72	0.005
18.	73	0.60	0.725	0.72	0.005
19.	75	0.89	0.773	0.8	-0.027
20.	75	0.89	0.773	0.8	-0.027
21.	76	1.04	0.850	0.88	-0.03
22.	76	1.04	0.850	0.88	-0.03
23.	78	1.33	0.908	1	-0.092
24.	78	1.33	0.908	1	-0.092
25.	78	1.33	0.908	1	-0.092
<b>Total</b>	<b>1720</b>	<b><math>L_o = 0.083</math></b>			
<b>Mean</b>	<b>66,15</b>	<b><math>L_t = 0.173</math></b>			

**Table 4.2.3. Frequency Distribution of Post-Test Experiment Class**

No	$X_i$	$F_i$	$F_i X_i$	$X_i^2$	$F_i X_i^2$
1	67	1	67	4489	4489
2	70	2	140	4900	9800
3	75	6	450	5625	33750
4	76	4	304	5776	23104
5	78	3	234	6084	18253
6	80	4	320	6400	25600
7	85	3	255	7225	21657
8	86	1	86	7396	7396
9	90	1	90	8100	8100
<b>Total</b>		<b>25</b>	<b>1946</b>	<b>55995</b>	<b>152149</b>



**Table 4.2.4. Normality of The Post-Test in Experiment Class**

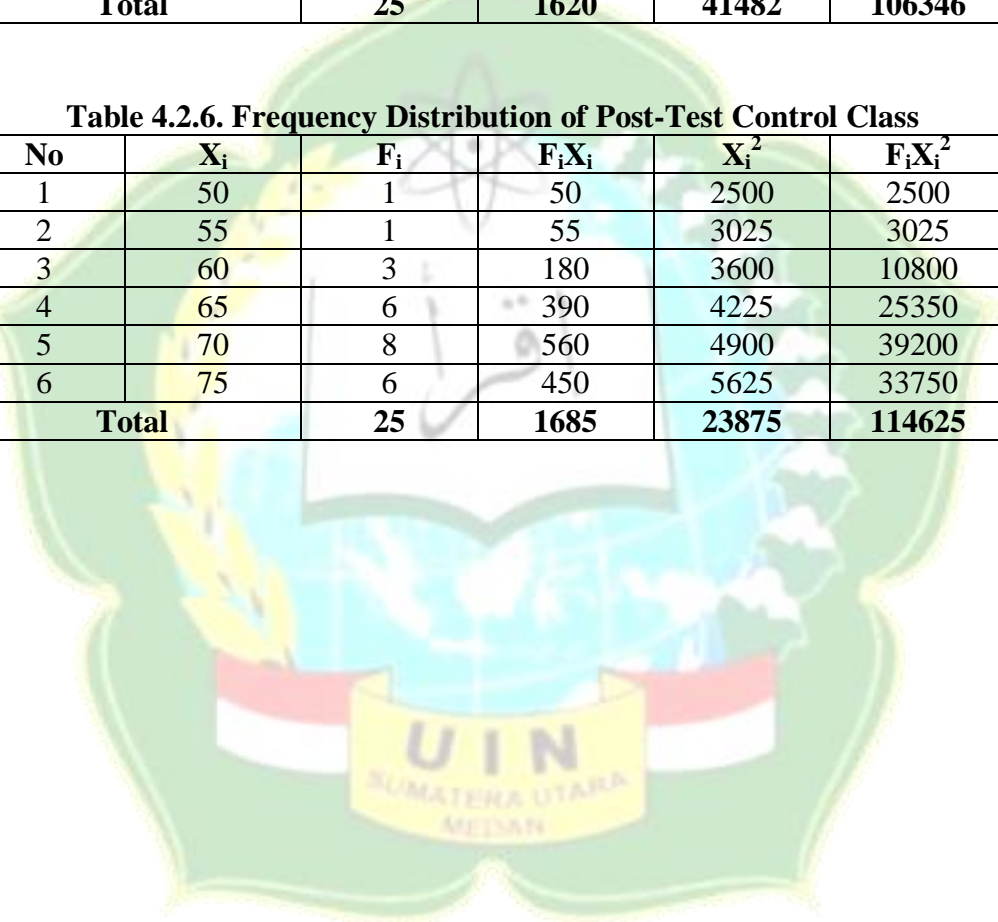
<b>No.</b>	<b>Score</b>	<b>Zi</b>	<b>F(Zi)</b>	<b>S(Zi)</b>	<b>F(Zi) - S(Zi)</b>
1.	67	-2.04	0.020	0.04	-0.02
2.	70	-1.48	0.069	0.12	-0.051
3.	70	-1.48	0.069	0.12	-0.051
4.	75	-0.53	0.301	0.36	-0.059
5.	75	-0.53	0.301	0.36	-0.059
6.	75	-0.53	0.301	0.36	-0.059
7.	75	-0.53	0.301	0.36	-0.059
8.	75	-0.53	0.301	0.36	-0.059
9.	75	-0.53	0.301	0.36	-0.059
10.	76	-0.34	0.366	0.52	-0.154
11.	76	-0.34	0.366	0.52	-0.154
12.	76	-0.34	0.366	0.52	-0.154
13.	76	-0.34	0.366	0.52	-0.154
14.	78	0.03	0.492	0.64	-0.148
15.	78	0.03	0.492	0.64	-0.148
16.	78	0.03	0.492	0.64	-0.148
17.	80	0.40	0.344	0.8	-0.456
18.	80	0.40	0.344	0.8	-0.456
19.	80	0.40	0.344	0.8	-0.456
20.	80	0.40	0.344	0.8	-0.456
21.	85	1.35	0.911	0.92	-0.009
22.	85	1.35	0.911	0.92	-0.009
23.	85	1.35	0.911	0.92	-0.009
24.	86	1.54	0.938	0.96	-0.002
25.	90	2.29	0.998	1	-0.012
<b>Total</b>	<b>1946</b>	<b><math>L_o = -0.154</math></b>			
<b>Mean</b>	<b>74,85</b>	<b><math>L_t = 0.173</math></b>			

**Table 4.2.5. Frequency Distribution of Pre-Test Control Class**

No	$X_i$	$F_i$	$F_i X_i$	$X_i^2$	$F_i X_i^2$
1	50	1	50	2500	2500
2	53	1	53	2809	2809
3	55	3	165	3025	9075
4	60	3	180	3600	10800
5	63	2	126	3969	7938
6	65	7	455	4225	29515
7	68	1	68	4624	4624
8	73	2	146	5329	10658
9	75	3	225	5625	16875
10	76	2	152	5776	11552
<b>Total</b>		<b>25</b>	<b>1620</b>	<b>41482</b>	<b>106346</b>

**Table 4.2.6. Frequency Distribution of Post-Test Control Class**

No	$X_i$	$F_i$	$F_i X_i$	$X_i^2$	$F_i X_i^2$
1	50	1	50	2500	2500
2	55	1	55	3025	3025
3	60	3	180	3600	10800
4	65	6	390	4225	25350
5	70	8	560	4900	39200
6	75	6	450	5625	33750
<b>Total</b>		<b>25</b>	<b>1685</b>	<b>23875</b>	<b>114625</b>



## Appendix G

### Documentation





